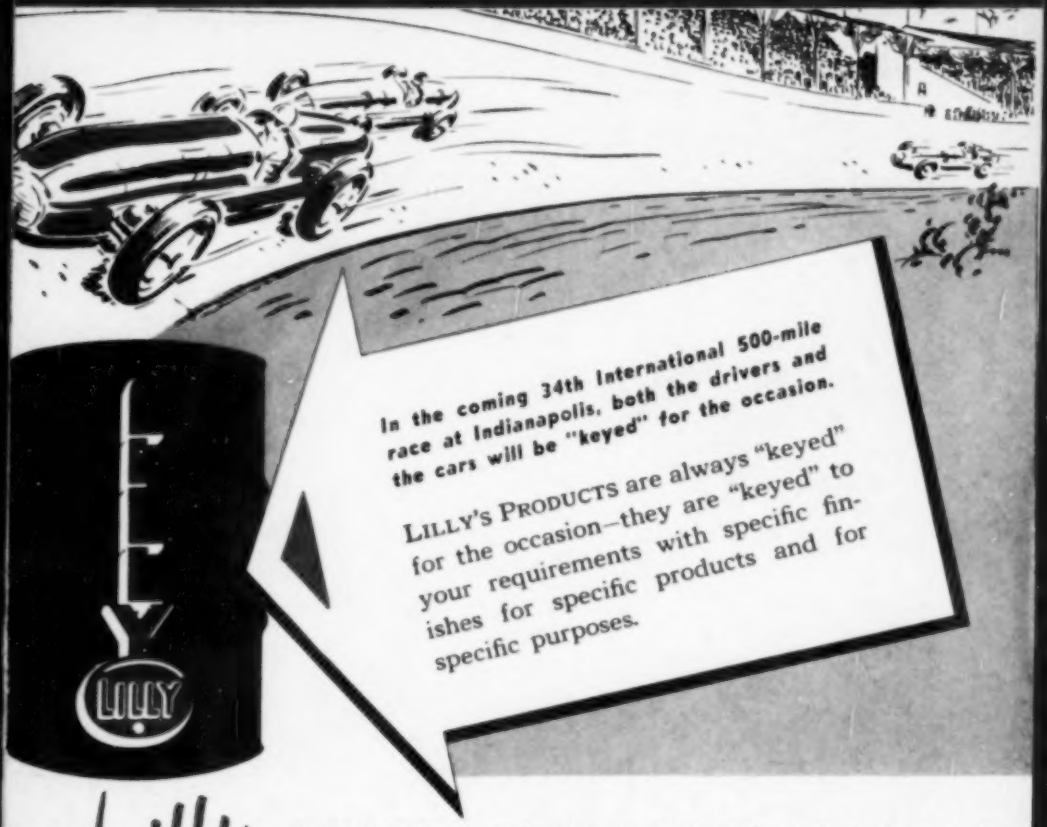
Industrial FINISHING

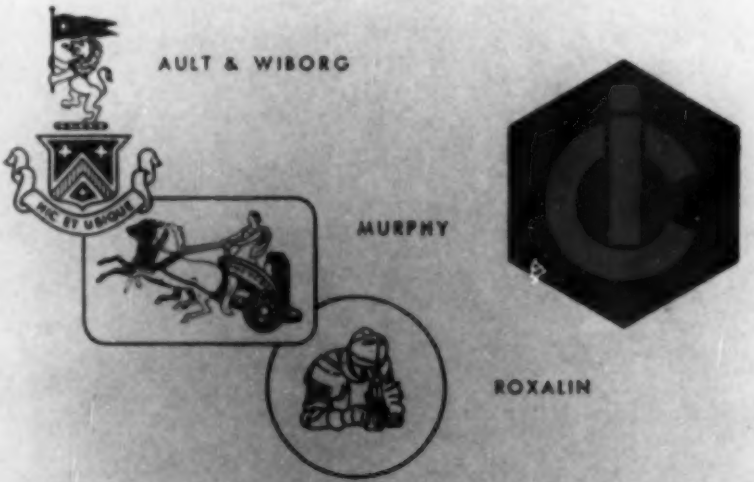

In the coming 34th International 500-mile race at Indianapolis, both the drivers and the cars will be "keyed" for the occasion.
LILLY'S PRODUCTS are always "keyed" for the occasion—they are "keyed" to your requirements with specific finishes for specific products and for specific purposes.
LILLY

THE Lilly VARNISH COMPANY
FINISHES
Indianapolis, Indiana • Gardner, Mass.
THE LILLY COMPANY • High Point, N. C.

Interchemical *Finishes*

UNDERCOATS, VARNISHES, LACQUERS,
ENAMELS for METAL, PLASTIC, WOOD

To give your product a good start, give it an Interchemical Finish!



MAIN OFFICE: 350 FIFTH AVENUE, NEW YORK, N. Y.
FACTORIES: ELIZABETH, CINCINNATI, CHICAGO, LOS ANGELES

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No, KOCH doesn't build ALL the Finishing Systems in the world, but . . .

KOCH DOES give you an expertly engineered Finishing System that cuts costs and maintains your high quality finishes.

KOCH DOES assume full responsibility for the complete job—builds any or all component parts of the system so as to perfectly dovetail, saving costly extra work.

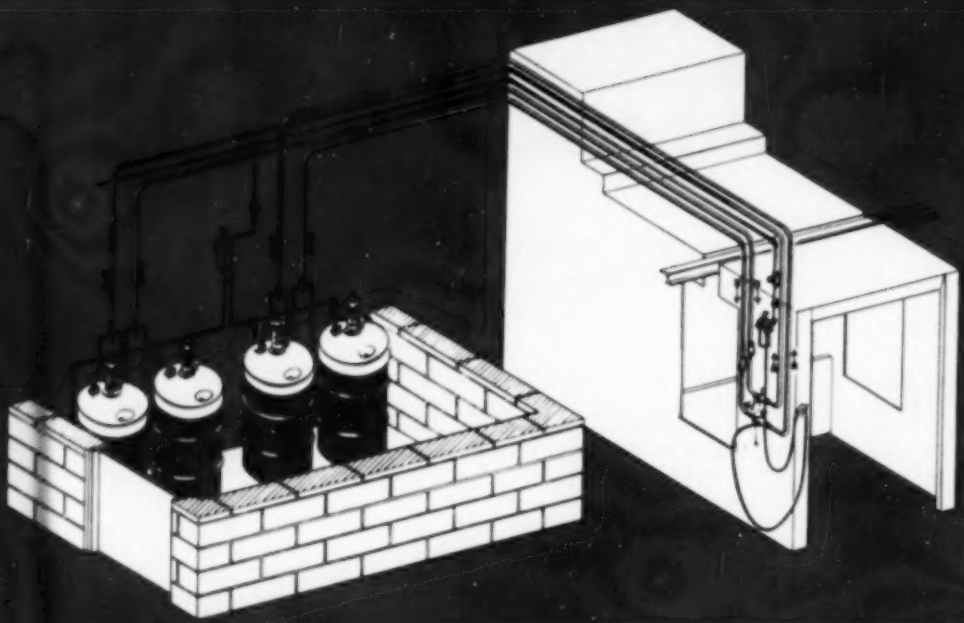
KOCH DOES back your installation with 76 years of metalworking experience—experience that gives you complete job satisfaction.

LET KOCH PROVE TO YOU how other progressive manufacturers are profiting today by KOCH-designed, KOCH-fabricated and KOCH-installed finishing systems.

Phone, Wire or Write for Details!

GEORGE **KOCH** SONS, INC.
EVANSVILLE, INDIANA

Two-Color Circulating



GET THESE 12 ADVANTAGES

WITH A PAINTMASTER CIRCULATING SYSTEM

1. Mixes paint thoroughly.
2. Perfectly mixed paint always circulating to spray booth.
3. Constant control of viscosity, pressure, and volume.
4. No shut-down for refills.
5. No explosion hazard due to pressure.
6. Less risk of fire.
7. No pressure pots to clean.
8. Reduced handling costs . . . pumps from original barrel.
9. Less overspray . . . paint conserved.
10. Better plant housekeeping . . . less spillage.
11. Separate mixing room.
12. No shut-down required to check supply.

GRACO

Paintmaster

Paint System ONLY $1090.63*

INCLUDES ALL EQUIPMENT—PUMPS, PIPING, FITTINGS, SPRAY GUN—FOR SYSTEM SHOWN HERE

Think of it! A complete two-color circulating paint system for only $1090.63.

While the price is a thousand dollars low compared to other two-color systems, we haven't cut a corner. Just fill out and mail the coupon at the bottom of this page and we'll send you a complete bill of materials, priced f.o.b. Minneapolis. In addition to four *Paintmaster* Pumps, this price allows for fittings . . . a spray gun and 160 feet of steel tubing. Spray booth and installation labor are, of course, extra.

Two Pumps for Each Color

Did you notice that four *Paintmaster* Pumps are included . . . not the traditional two? That's one reason why hundreds of the nation's finest manufacturing plants now use *Paintmaster*. Graco's "two pumps-for-each-color" system allows ample time for mixing a reserve drum of paint while the first is being emptied. Instant change-over, from one drum to the next, assures uninterrupted production.

Compare *Paintmaster* point for point . . . dollar for dollar . . . with any other method of production paint handling. *It pumps direct from drums* making transfer of material unnecessary. *It saves gallons of paint* lost in transfer. Additional gallons can also be saved because low pressure pumping reduces overspray. By centralizing all preparatory work in a control room, fire hazards are minimized . . . insurance costs are often reduced.

Here's the Secret of Paintmaster's Phenomenal Success

Paintmaster brings a revolutionary new idea to circulating paint systems. It uses a gear pump—not air—for paint pressure. Since paint is pumped—not forced out of a pressurized tank—aeration is minimized in most materials . . . eliminated in others.

The propeller-type agitator, shown at the right, keeps paint perfectly mixed.

Mail coupon today for complete details.

*F.O.B. Minneapolis or your Paintmaster distributor. Installation labor and spray booth not included.

GRAY COMPANY, Inc.
15 Graco Square, Minneapolis 13, Minnesota

● Please send complete details on the Graco Paintmaster. We are interested in a circulating paint system for ____ (number) of colors.

Name _____

Company _____

Address _____

City _____ *Zone* _____ *State* _____

CHEM-VEER

Unequaled advantages of a finish tough as rhinoceros hide that defies mars, scratches, liquors, even hot plates and nail polish remover! Yet can be repaired by dealers (if damaged) by currently used methods. Water white, non-yellowing; one coat application dries at room temperature ready to rub in a few hours

One of the

3 SENSATIONAL NEW FINISHES!

Destined to Revolutionize all Previous Concepts of fine furniture finishes for Visible Beauty — Demonstrable Quality and Time- and Labor-Saving Economy of Application.

Manufacturers!

If you would like a demonstration of these revolutionary new finishes without obligation, of course, please wire or write to

GRAND RAPIDS VARNISH CORPORATION
GRAND RAPIDS, MICHIGAN
Makers of the Famous Guardsman finishes

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Industrial FINISHING

W. H. ROHR, Editor P. C. BARDIN, Associate Editor

Contents

Random Comment on the Industrial Scene 8
Pearl Lacquer Finishes on Simulated Pearls 22
Repainting Passenger Cars in Southern Pacific Shops 36
Finishing Door Chimes at the NuTone Factory 48
Harmony in Grays for Industrial Equipment 60
Electric Burn-Off Oven Cleans Metal Stampings 70
Finishing Mahogany Cabinets 79
Letters from Readers 88
Questions and Answers 98
Materials; Supplies; Equipment 106
Booklets; Circulars; Catalogs 122
Editorial 124
"Classified Advertising" Section 134
Advertisers Index 136

Book on Rubber Development 33
Spray Cleaning Setup for Metal Parts 44
Woods Named President of Commercial Solvents 44
Atlas Powder Announces Appointments 58
New Synthetic Finishes from Styrene 66
Gray Spots in Lacquer Finished Cabinets 74
Auto Body Engineers to Hold Convention in Detroit 74
Lowering the Cost of Chromic Acid Treatments 74
Chemical Blacking Salt 104
Gables Sell Their Interests in Indianapolis Varnish Co. 104
New DeVilbiss Plant in Calif. 104
Dr. Thau Organizes New Plant in Newark, N.J. 104
Strand Division of Balmar Corp. Stays in Chicago 112
School for Finishers Free 123
"Color Conditioning" Movie Free 123
Sonneborn Forms Paint Division 131
U. S. Testing in N. Y. 131
"Easy on the Eyes" Safety Film 132
Finishing Exposed Wood for Upholstered Furniture 132
Beck Heads Binks' Ceramic Division 134

MAY, 1950
Vol. XXVI, No. 7

ABC

Distributed monthly to finishing room and paint shop foremen, production superintendents, chemists, purchasing agents and company executives of industrial plants where production cleaning and finishing are major operations in the manufacture of parts and products.

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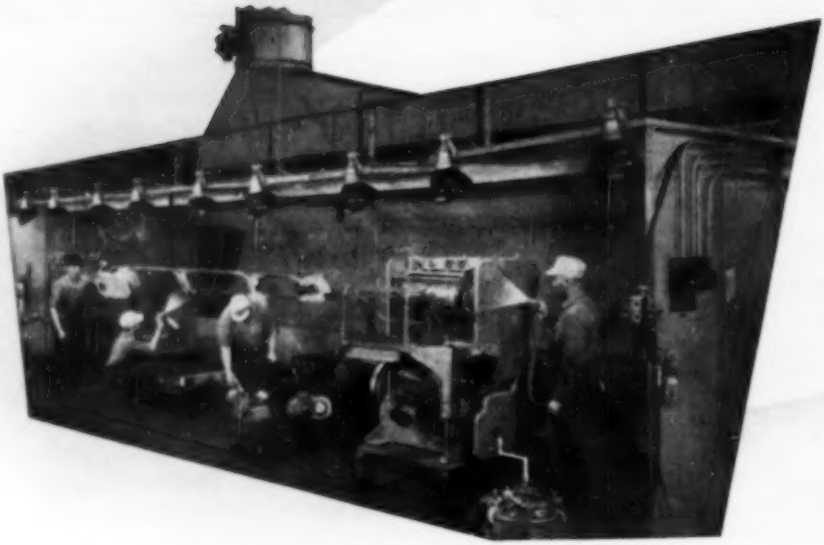
IN ALL YOUR PAINTING...



DE VILBISS

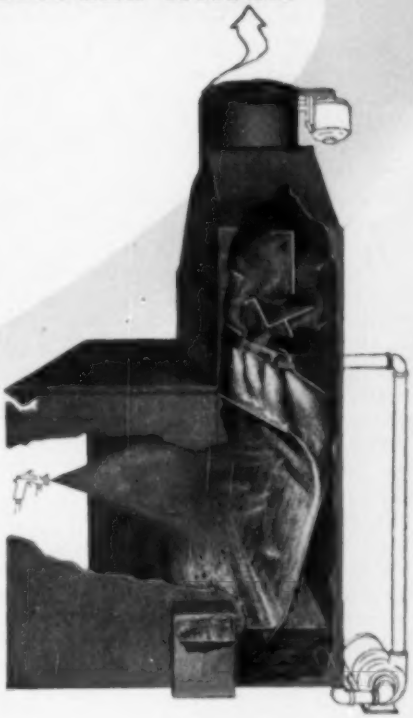
because we engineer AIR . . . and WATER

In the DeVilbiss Air-Wash Spray Booth, the paint-laden air is thoroughly scrubbed through a DeVilbiss-engineered multiple waterfall before exhausting to the outside.

The *right* air velocity is used to completely remove all spray mist and provide protection for your spray painters. And the velocity is just right to assure complete air-washing action in the exhaust chamber where millions of water pellets of the correct size knock all the paint particles out of the airstream.

The DeVilbiss sales engineer will gladly analyze your painting requirements and help you get maximum efficiency and protection at lowest cost with the well-lighted, scientifically-designed DeVilbiss Air-Wash Spray Booth. Call him today, or write to . . .

THE DEVILBISS COMPANY • Toledo 1, Ohio
Canadian Plant: WINDSOR, ONTARIO



Shown in cut-away is one of the more common types of the many DeVilbiss Air-Wash Spray Booths suitable for practically every job.

means **Quality** *in all four . .*

SPRAY EQUIPMENT
EXHAUST SYSTEMS
AIR COMPRESSORS
HOSE & CONNECTIONS

Over-Age Methods, Equipment. George Terborgh, research director of Machinery & Allied Products Institute told more than 450 top executives at a meeting of the National Industrial Conference Board in New York, that industry needed, "re-equipment staffs, custom made for each individual plant situation." The staff, which may consist of one or more specially trained men, should conduct a continuous and systematic review of all of the equipment. Ultimate aim is to supply top management with an authoritative, overall plan, including estimates of cost, instead of piece-meal replacements suggested one at a time after the actual need for replacement has occurred.

At the same meeting, Frederick C. Crawford, president of Thompson Products, Inc., told members that half our tools are obsolete, methods are only 66% effective, and man effort is only 60% effective. These things can be corrected.

* * *

Better Wire Enamel has been developed; better adhesion, longer life and greater efficiency for electrical equipment.

* * *

Materials Handling promises to move into first place in the heavy equipment field to show the greatest increase in sales in 1950. R. Kennedy Hanson, executive officer of the Materials Handling Institute, gave us a reason for the upturn that management, throughout this country as well as abroad, is planning to cut costs by reducing waste motion and to speed up handling of materials.

Conveyors represent about 26% of the total output of materials handling equipment. Conveyor manufacturers will take orders for perhaps 20% more equipment than they did in the first half of 1949.

* * *

Controlling Humidity as well as recording relative humidity is possible through a new instrument just announced by Weston Electrical Instrument Co., 614 Frelinghuysen Ave., Newark 5, N.J. The device uses the wet-and-dry bulb principle. The wet bulb is controlled to the depression for which it is set, regardless of any change in dry bulb temperature.

* * *

Electrical Glass capable of conducting electricity has been perfected at Corning Glass Works, Corning, N.Y. The glass has a thin transparent film of metallic oxide which, while it conducts electricity, offers sufficient resistance to heat the glass up to 660° F. A wide range of temperatures are possible, depending upon the resistance of the film and the current used.

Field tests have been made with this electrical glass to dry textile yarns and for drying lacquer on plastic playing cards. For heaters of all

(Continued on page 11)

Dolan's 35% HI-SOLIDS LACQUER

. . . sprays right from the drum: requires no thinning or heating. 35% solids in a single application.

OUTSTANDING!!

. . . Because it can be sprayed without the addition of thinners or the necessity of pre-heating to bring down to spraying viscosity, Dolan's 35% Hi-Solids Lacquer gives an improved finish at greatly reduced cost. It is unusually tough, with exceptional cold check resistance. Very light in color. Fits into any finishing schedule. A demonstration will prove convincing. Write us for 5 gallons at drum price!

"From the start consider the Finish"

V. J. DOLAN & COMPANY, Inc.

Manufacturers of "Unquestionable Quality"

INDUSTRIAL FINISHES

1830 N. Laramie Ave. Chicago 39, Ill.

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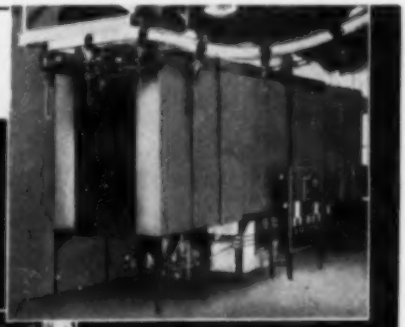
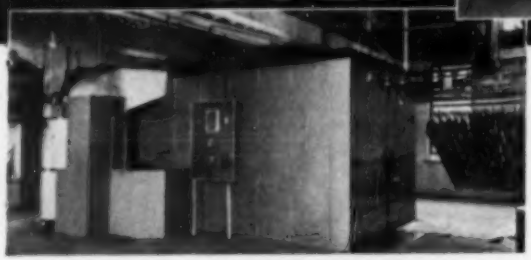
for efficient straight-line production—get a

LANLY CONVEYORIZED OVEN





Lanly experience embraces the designing of many such ovens for a large variety of purposes.

A letter or phone call will make our counsel available without obligation. Write for literature.

THE LANLY CO. 760 Prospect Ave. CLEVELAND, OHIO

ELECTRO COLD STRIPPER

A RADICAL ADVANCE IN SPEEDY FINISH REMOVAL

- Used cold. Non-inflammable. Non-injurious to hands or metal.
- Removes paints, lacquers, enamels, synthetics and wrinkles almost instantly. You can see the finish literally "pop off". No bother—no fuss. Simply dip the article into Cold Stripper, wait a few minutes for film to loosen, shake well and let set a few minutes. Then wash with pressure stream of water or wipe well with rag AND REFINISH AT ONCE.
- Will not affect aluminum, brass, copper, magnesium, zinc, steel, cast iron or their alloys in the time required for removal of paint film—even when metal is precision ground or machined.

Write for sample and quotations—or order 5 gallons at drum price.

ALLIED FINISHING SPECIALTIES CO.

2641 W. GRAND AVE. · CHICAGO 12, ILL.

types, this glass saves space, and produces a uniform heat. When used in coffee percolators, the film reflects heat inward to the water.

The glass used is tough, strong, heat-resistant, and the transparent film is more resistant to scratching or to chemicals than the glass itself.

* * *

Private Fire Brigades. At a recent meeting of the Fire Protection Institute in New York, plans were laid to organize fire prevention brigades in America's leading industrial plants.

The idea is to organize individual brigades that will operate on more or less standardized methods. Tests of these methods have been successfully made at the Dayton Rubber Co., Dayton, Ohio, and in Newark, N.J. Training methods in the Newark case required ten weeks and included participation by business and industrial companies. It is hoped that through wider use of the experience gained in these tests, and through organization of brigades in other industrial centers, to set up a National Association of Private Fire Brigades.

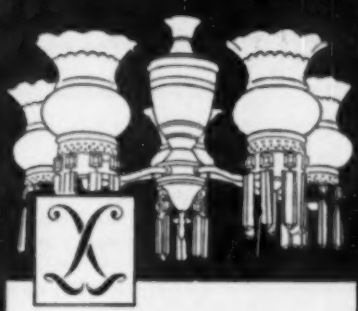
The object of all of this is to reduce fire loss which averages more than 700 million dollars annually and takes more than 11,000 lives. There is little use in bemoaning such needless waste of lives and property if we don't do something about it.

* * *

Automatic Viscosity Control. In any finishing or coating operations where the viscosity of the material is likely or sure to change because of solvents vaporizing and escaping, or because the contents of a container are not agitated or stirred to prevent settling of pigments, or where temperature changes affect the viscosity, a Brookfield Viscotrol can be engineered into the production system to provide continuous and automatic viscosity

Lightolier

LIKES LACQUER BEST BECAUSE...



. . . lacquer is durable and resistant to abrasion . . . keeps bright the lustre of Lightolier's fine lamps and lighting fixtures. Lightolier prefers lacquer because it resists moisture, perspiration, alcohol, mild soap alkalies, and cooking vapors.

Lightolier likes to work with lacquers. Little skill is required to apply them, they dry fast, and colors can be duplicated with ease.

HERCULES POWDER COMPANY
928 Market St., Wilmington 99, Del.

HERCULES DOES NOT MANUFACTURE LACQUERS, ONLY THE DERIVATIVES FROM WHICH THEY ARE MADE

LACQUER
HELPS YOU SELL

CL50-10

WATER RINSABLE PAINT REMOVER

Fast—Powerful

NON-INFLAMMABLE

For removing tough finishes such as BAKED ENAMEL

Imperial Water Rinsable Remover is especially designed for removing tough finishes from metal surfaces. It is extremely powerful, and effective not only on paint, lacquer, enamel, etc., but also on baked enamel and Zinc Chromate primer.

Heavy-bodied — will not run on upright surfaces. Easily applied with a brush. Softened finish may be flushed off with water, using a hose. A stiff bristle brush or steel wool dipped in water or a putty knife may also be used. No wash-up is required after finish has been removed.

Useful on small objects, too, which can be immersed in the remover and then rinsed off with water.

A real time and labor saver!

MAIL COUPON FOR FULL INFORMATION

WILSON-IMPERIAL CO.
125 Chestnut Street
Newark 5, N. J.

WILSON-IMPERIAL CO.
125 Chestnut St., Newark 5, N. J.
Please send me full information on Imperial Water Rinsable Remover.

Name.....

Company.....

Street.....

City.....State.....

control. The Viscotrol is a viscosity measuring, signaling and transmitting unit which is designed for use where viscosity variations, during production, normally occur only in one direction and it is desired to accomplish continuous and automatic viscosity control.

* * *

Magnify Surfaces to see more and find out more about their condition before and after they undergo various shop operations and tests. You can do this with a wide-field industrial 20-power microscope (Model S-186) now being produced by Buhl Optical Co., Pittsburgh 12, Penna. This shop microscope is designed to withstand rough handling. It is particularly valuable where work requires close and accurate checking of details, as is the case with the surfaces of various materials that require cleaning, smoothing, coating, rubbing and polishing.

* * *

Plywood adhesive the size and thickness of a postage stamp can suspend the weight of a large automobile, according to Monsanto Chemical Co. of St. Louis, one of the nation's leading manufacturers of plywood glues.

Maple blocks glued with modern adhesives, for example, will test up to 4000-lbs. per square inch shear-strength. Removed from the wood, this film is little more than a fragile membrane which can easily be crushed. What gives such an adhesive its remarkable strength is not fully understood.

* * *

Alkyd Resins. Industry produces more than 280 million pounds of alkyd resins. They find their way into products for the house, automobile and office. In addition to their most

(Continued on page 131)

SLASH MAINTENANCE COSTS!

by using

PLASCOTE NO. 1

The new peelable plastic boothcoating.

- Actual using reports prove Plascote No. 1 will cut booth cleaning time in half.
- It is applied quickly and easily by use of ordinary paint spray equipment, or by brushing.
- Shipped ready to apply, no pre-mixing necessary.
- Inflammable over-sprayed paints may be peeled from the spray booth walls in large sheets.
- Economical to use due to extensive coverage per gallon.

TEST SAMPLE OFFER:

Order 5 gallons at the drum price of $1.95 per gallon.

CHEMCO PRODUCTS COMPANY, Inc.

7740 WEST 47TH STREET LYONS, ILLINOIS

Your Signal! **9-8-7-0**

CLEAR METAL LACQUER

For

silver, cadmium, zinc, copper, brass, aluminum.

OUTSTANDING

1. Adhesion to metal surfaces
2. Resistance to sulfur tarnish
3. Resistance to oxidation
4. Resistance to perspiration
5. Resistance to abrasion

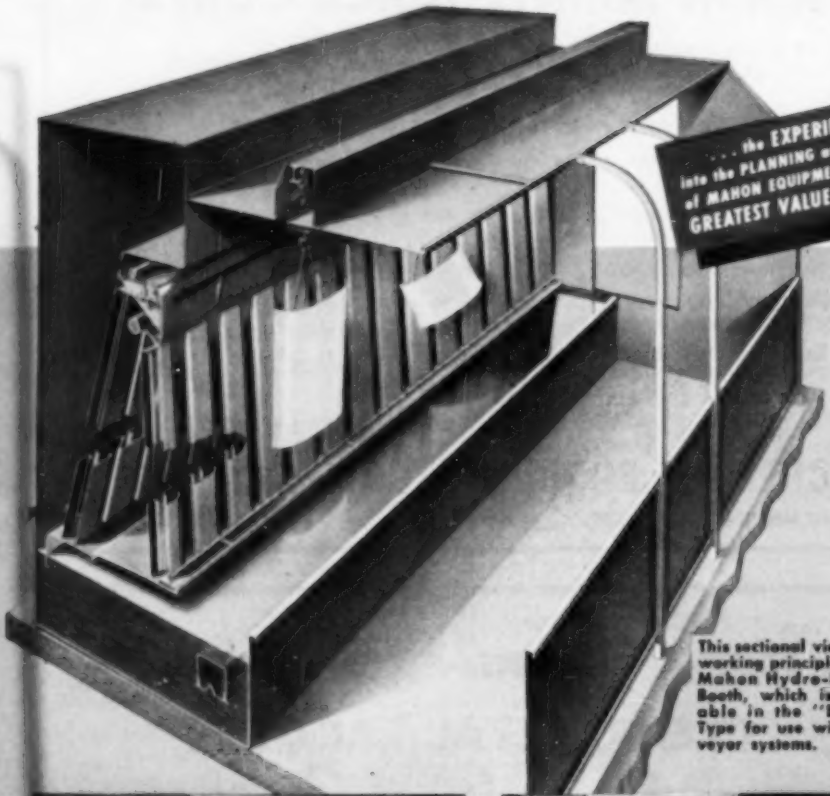
Pale in color. Takes 100-200% reduction. Dries under 15 minutes.
A premium product — priced at ordinary lacquer levels.

THE VARNISH PRODUCTS COMPANY

5206 HARVARD AVENUE
CLEVELAND, OHIO

ANNOUNCING

. . . the EXPERIENCE that goes into the PLANNING and ENGINEERING of MAHON EQUIPMENT is the item of GREATEST VALUE to YOU!



This sectional view shows the working principle of the New Mahon Hydro-Filter Spray Booth, which is also available in the "Downdraft" Type for use with floor conveyor systems.

. . . THE NEW MAHON

HYDRO-FILTER SPRAY BOOTH

WITH THE "Hydraire" FLOOD SHEET

(Pat. Appl. For)

Greatest Advance in Spray Booth Development in TWO DECADES!

In an endeavor to reduce cleaning and maintenance requirements of spray booths to a minimum, and to eliminate the necessity for periodic interruptions in production to permit removal of paint sludge from the surface of the solution in the charging tank, Mahon engineers have come up with an entirely new concept in the principles of overspray control and disposal.

A new, vertically fluted "HYDRAIRE" flood sheet (Patents Applied For) consisting of a staggered front and rear section, permits passage of air through the flutes and creates an even suction over its entire flooded area. This eliminates eddies, and produces an even flow of air throughout the working area of the spray booth . . . working conditions are thereby vastly improved. Front and back sections of this new flood sheet are so designed, coordinated and flooded as to produce eddying traps which remove the bulk of the overspray at this point. The remainder of the overspray is struck from the air by torrents of chemically treated water in rear of the flood sheet. Water eliminators, similar in design to the Hydraire flood sheet, form the rear wall of the washing chamber and effectively remove the entrained water from the air.

In this new spray booth, twice the amount of water is circulated at one-half the static pressure required in former models. The washing area has been increased four and one-half times . . . the density of paint overspray per cubic foot of washing area is therefore reduced by a like figure. Cleaning and maintenance problems are reduced to a minimum.

Sludge disposal problems have also been solved in this new spray booth. Particles of paint forming into a sludge on the surface of the charging tank move constantly, due to an induced water current, toward and over a weir into a jet eductor chamber where the sludge is picked up as fast as it accumulates and conveyed hydraulically to an Automatic Sludge Segregator and Unloader.

The Automatic Sludge Segregator and Unloader (Patents Applied For) may be located in any convenient place in relation to the spray booth. It traps the paint sludge removed from the chemically treated water and returns the water to the charging tank of the booth—this circulation continuous while the spray booth is in operation. The unloading device, which functions automatically, dumps the accumulated paint sludge through a hopper into any portable receptacle for reclamation or disposal.

This new Mahon Spray Booth can also be furnished in the "Downdraft" Type, for floor conveyor systems, with Hydro-Filter Units below the floor level of the booth. Both types can be engineered to accommodate any product regardless of size or shape.

Mahon engineers will gladly explain, at your convenience, the many labor-saving advantages of this new, highly efficient, trouble-free spray booth.

THE R. C. MAHON COMPANY

HOME OFFICE and PLANT, Detroit 11, Mich. • WESTERN SALES DIVISION, Chicago 4, Ill.

Engineers and Manufacturers of Complete Finishing Systems—including Pickling Equipment, Metal Cleaning and Rust Proofing Equipment, Dry-Off Ovens, Hydro-Filter Spray Booths, Filtered Air Supply Systems, and Drying and Baking Ovens of All Types, Dust Collectors, and other Units of Special Production Equipment.

MAHON

MULTI-PURPOSE

NEW TYPE COATING

1. Prolongs product life

2. Cuts structural maintenance costs

Rust-Chek

COATING

resists water, salt and fumes

Originally developed, on special request, to stop excessive corrosion of railway track in tunnels, this new type coating is finding ever broadening acceptance as both a product undercoat and for maintenance painting as a 2-coat operation.

Rust-Chek has exceptional resistance to water, salt and acid fumes; retains, through long years of service, unusual qualities of flexibility and adhesion that definitely prevent chipping, cracking or peeling.

Investigate now! Skilled Rinshed-Mason engineers to help you!

For PRODUCT UNDERCOATS

Corrosion-resistant, tough and durable, Rust-Chek is highly recommended as a product undercoat, and especially if the product will ultimately be subjected, in use, to corrosive atmospheres and moisture. *May also be used as a finish coat if high gloss and special coloring are not required.*

For STRUCTURAL STEEL

Bridges or factory structural steel work can be quickly and easily coated with Rust-Chek, adding countless years of life and greatly lengthening time between coats. Rust-Chek puts up a solid front against salt spray, fumes from processing equipment, etc.

Write for DESCRIPTIVE FOLDER

Free Descriptive Folder and specifications will be sent you on request. Test sample will also be forwarded if wanted.

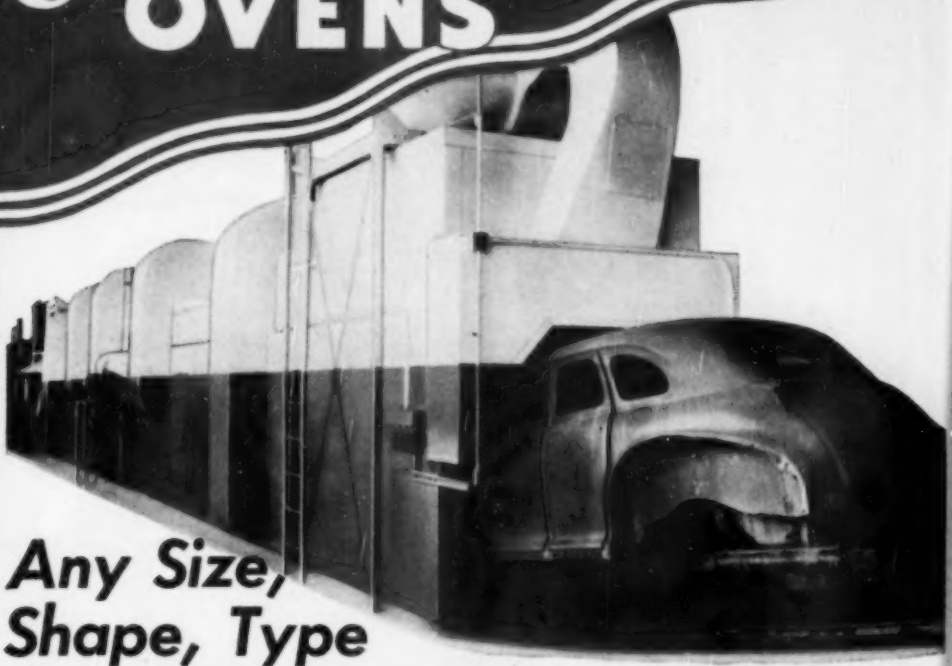
RINSHED-MASON CO.

5935-71 MILFORD AVE., DETROIT 10, MICH.

Engineered to your production

Schmieg OVENS

CENTRI MERGE



Any Size, Shape, Type FOR EVERY KIND OF WORK

Whatever your requirements, Schmieg drying and baking ovens are designed and engineered to give you highest efficiency at lowest operating and maintenance cost.

Conveyor or box type, for any installation arrangement, compactly designed to save valuable floor space, engineered to fit smoothly into your production plan, Schmieg ovens *make it easy* for you to turn out the very best paint jobs.

Schmieg ovens give you automatic temperature control, insure against hot spots, are meticulously insulated to prevent heat loss. Every operating essential has been carefully designed and engineered to enable you to safeguard product quality.

So we say—No matter what size, shape or type of oven you may need, for any kind of work, Schmieg ovens give you most for your money.

Consult Schmieg engineers today.

THE best AIR PURGE is CENTRI MERGE

Schmieg INDUSTRIES INC.

Engineers & Manufacturers

312 PIQUETTE AVENUE • DETROIT 2, MICHIGAN

Office Equipment

LOOKS BETTER . . . LASTS LONGER

. . . when you use PITTSBURGH INDUSTRIAL FINISHES!

Tailor-made coatings of all kinds to meet your performance standards

TODAY, as for more than 90 years, Pittsburgh is giving valuable assistance to many users of industrial paints in solving finishing problems.

For instance, Pittsburgh helps to make better-looking and longer-lasting office equipment and appliances—typewriters, sound-recording and business machines, filing cabinets, water coolers, desks, chairs, desk lamps and metal receptacles of many kinds.

By working with the technical and engineering staffs of the makers of these products, Pittsburgh has produced high-grade industrial finishes to meet a variety of performance standards. Among these are a wide range of Lacquers for metal and wood, an equally wide variety of Industrial Enamels to meet almost every general finishing requirement, and a series of Lavax Wrinkle Finishes for wood, paper, steel, metal castings, aluminum, plastics etc.

These coatings provide exceptional adhesion, toughness and durability. Because they are easy to apply and dry quickly they speed up production. These finishes add to eye appeal and also keep the equipment on which they are used looking better for a longer period.

This broad experience with finishing problems can be helpful to you. Call on us for facts and figures.

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Factories: Milwaukee, Wis.; Newark, N. J.; Springdale, Pa.; Houston, Texas; Los Angeles, Calif.; Portland, Ore. Ditzler Color Division, Detroit, Mich. The Thresher Paint & Varnish Co., Dayton, Ohio. Forbes Finishes Division, Cleveland, Ohio.

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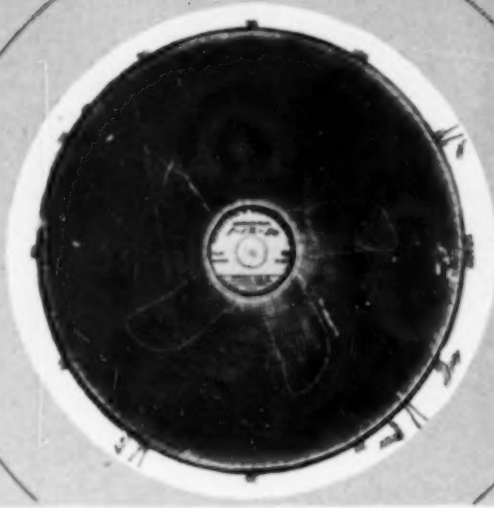

The smoke chart above tells its own story. It shows the evenness of temperatures in one of Florence Stove Company's present ROSS ovens. Three levels are recorded—Hi 18" from top, Lo 12" from floor, Med half way down.

This new installation will make a total of 5 ROSS ovens in the Gardner, Mass. plant where the nationally famous Florence Ranges are made.

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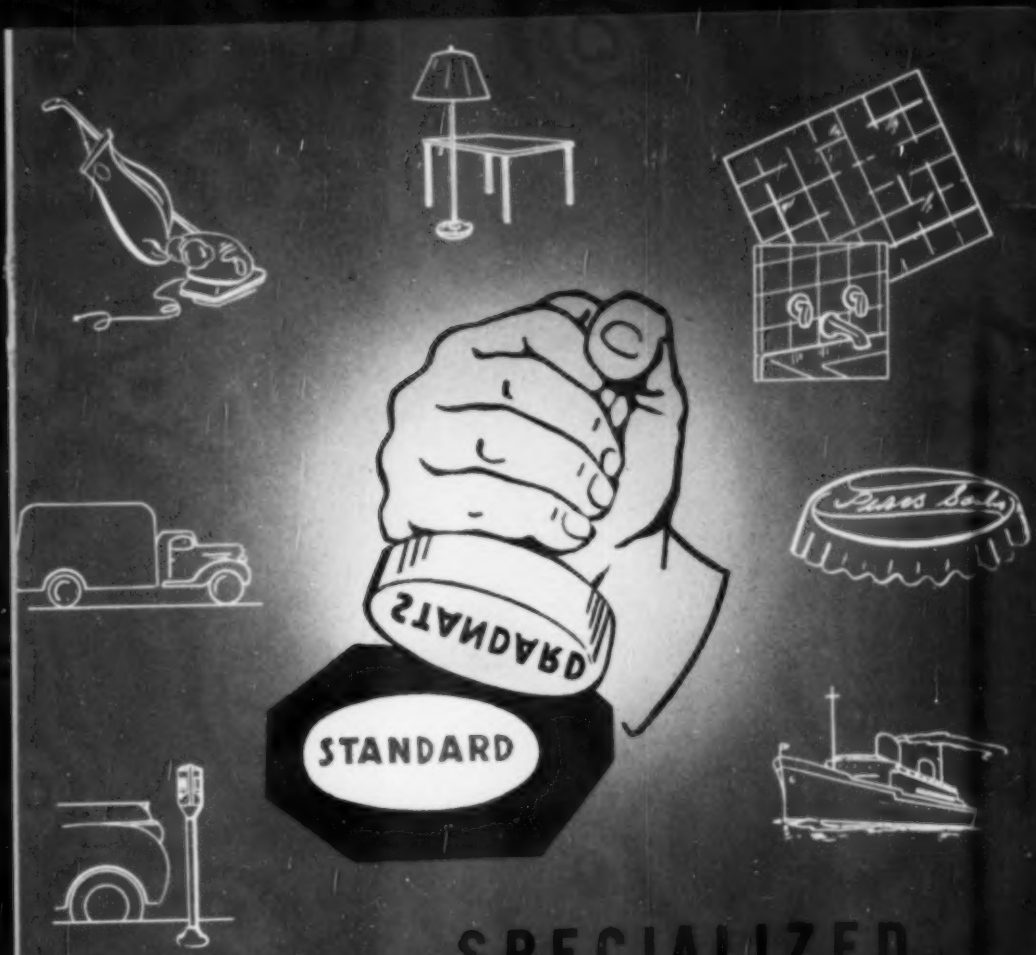

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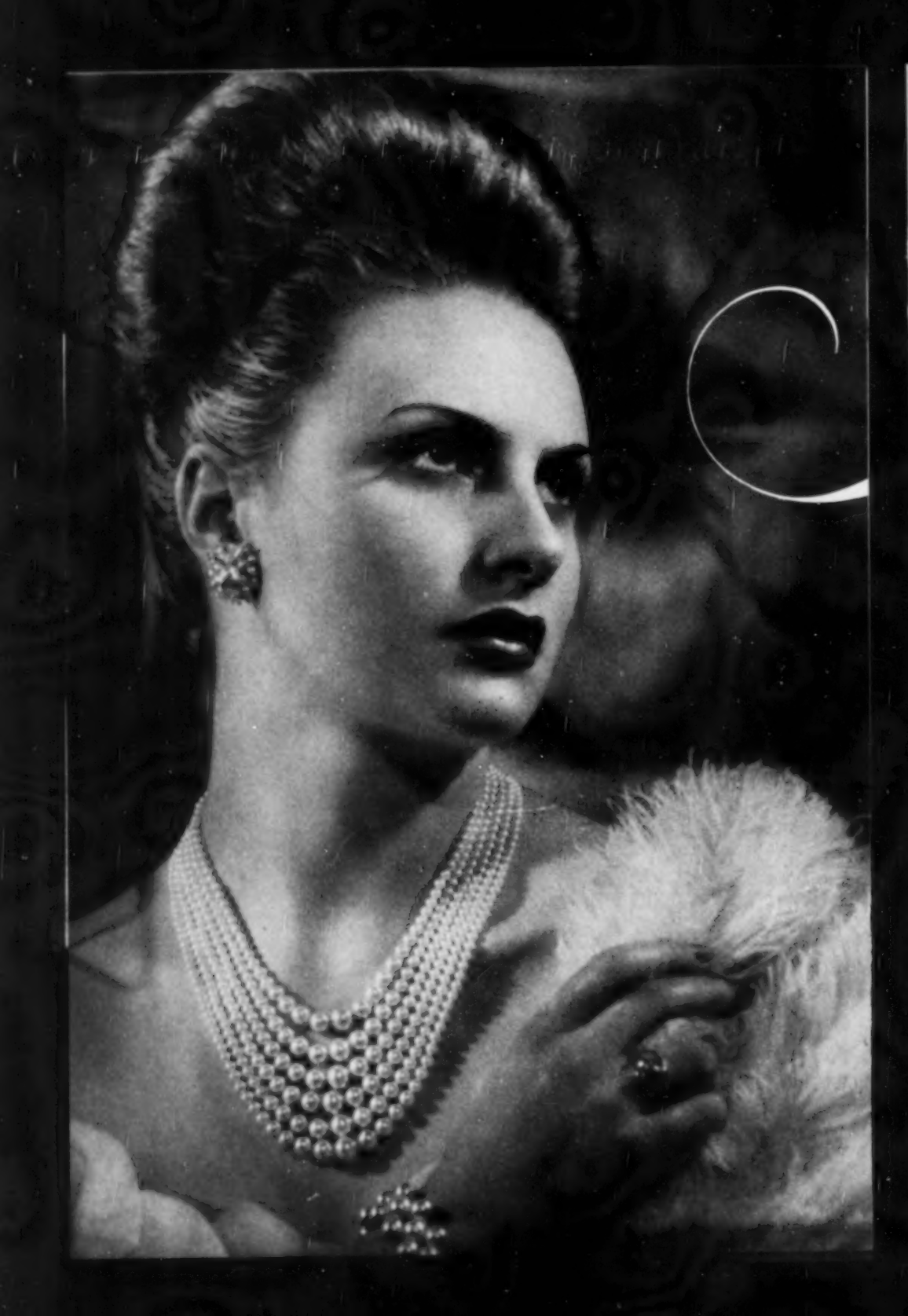


Pearl LACQUER FINISHES ON SIMULATED PEARLS

By H. A. MATTIN
The Mearl Corporation

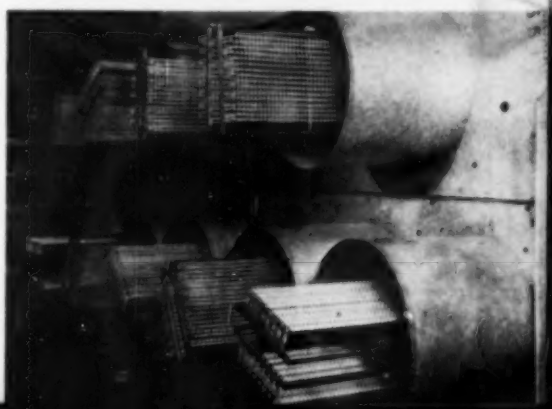
THE PRIMARY purpose of simulated pearl manufacture is to get a real pearl-like effect. "Pearliness" gives a soft diffused luster arising from multiple strata or thin layers of reflecting surfaces, as contrasted to a metallic luster arising from a sharp reflection of any mirror-like surface. Since light that reaches the eye originates at a multitude of points within a pearly film, making it impossible to focus on any single layer, an impression of depth and softness is obtained. In the real pearl this impression is created by reflections from alternating thin layers of carbonate of lime and organic material.

Pearl Essence; Guanine Crystals from Fish Scales

In simulated pearls the characteristic pearliness is brought about by reflections from layers of the crystals incorporated in lacquer base films. These crystals must be transparent or translucent, platelike, microscopic in size, very thin, and of a high index of refraction.

If the crystals were not translucent the under layers would be obscured. The crystals must be flat so they can be orientated with their flat sides more or less perpendicular to the source of light,

Strings of dip-coated beads in racks which rotate slowly in horizontal drying tunnels.



and to the eye of the observer, to obtain maximum reflection. The extreme thinness of the crystals, of course, makes possible the presence of many layers in a thin plastic film.

Pearl essence crystals, for instance, are only 40 millionths of an inch in thickness. The high index of refraction is a necessity, as the amount of reflection is dependent on the difference between the refraction of the crystals and of the vehicle in which they are embedded.

Besides having properties of pearliness, such crystals should be light stable, chemically inert, and insoluble in the lacquers employed. Of all the substances known these requirements are fulfilled to the greatest degree by the guanine crystals attached to fish scales and commonly called pearl essence.

Glass Beads Dip-Coated in Pearl Lacquer

Simulated pearls are made by dipping a bead in pearl lacquer, which is made by incorporating pearl essence into a pyroxylin base solution (nitrocellulose lacquer).

Glass beads used as a base for simulated pearls are made by holding the end of a milky white or alabaster glass rod into a flame until it melts, pulling a given amount of the soft glass off with a piece of wire, and then rotating the wire. As the glass gradually cools, the rotating action causes it to assume a spherical shape as it solidifies. The wire is then clipped off close to the bead, and the bead is immersed in nitric acid, which burns the remaining wire out, leaving a smooth hole. If the wire were pulled out it would leave a rough jagged hole which would tear the thread on which beads are strung.

Machines and Kinds of Glass Must Be Suitable

Bead-making machines employ the same principle. Wires on a cylinder are revolved, timed to arrive to catch a piece of molten glass as it drops. The wires rotate to shape the bead as it cools.

A new bead machine takes a melted piece of rod and works it between two rollers into a spherical form which it retains as it gradually hardens.

The type glass used in making beads affects the pearl. Transparent glass requires more coats of pearl lacquer than is economically feasible. Alabaster glass, an off-white glass, but not enough to lose it translucency, is the type most commonly used. The best glass is the so-called opal variety, which comes in a milky white cane. The bead made from it is clear and transparent, but when it is refired, it turns an alabaster white with an optical effect of a golden glow from the center.

A glass bead industry was developed in the U. S. during World War II, but the native industry is dying out with the return of cheap importations, as U. S. labor costs are so high. Czech and Japanese beads can be brought in already strung, either to a definite bead size or in graduations.

Beads Made of Plastic Are Lighter in Weight

Plastic beads are also widely used. The most popular plastic used is alabaster cellulose acetate, extruded in rods with a fine capil-

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lary center. The rods are cut into short pieces and fed into a bead-making machine which grinds them to the desired size. The beads are polished in a tumbling barrel to remove grinding marks. Plastic beads can also be made by injection or compression molding, which is cheaper than extrusion, but it is difficult to remove the mold marks.

Plastic beads have been molded directly on the string, coming out of the press in continuous lengths to be dipped on a continuous conveyor. These have been sold by the yard for millinery trimmings, and in the 6-mm. size, as necklaces.

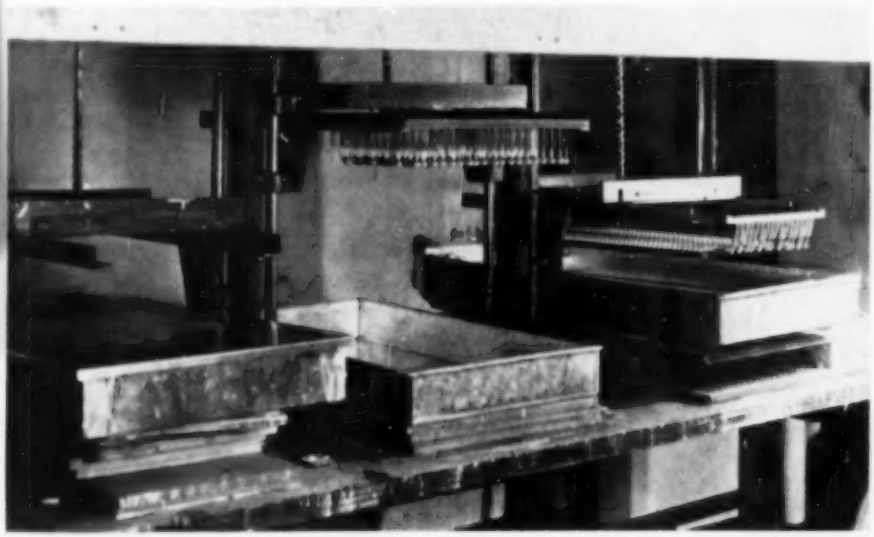
While glass beads have better optical properties than plastic beads, and customers usually prefer the heavier weight of glass for necklaces, the plastic beads have the advantage of being cheaper. In long lengths and multi-strand necklaces light weight is an advantage.

Plastic beads may be weighted by the use of pigments, but an increase in weight decreases the number of beads that can be obtained from a pound of this heavier plastic, thereby increasing the cost per unit.

Toothpick Dipping Technique; Pearl Solution Stirred

Until the last war, beads were always tooth-pick dipped. In this process the beads are mounted individually either on a wooden toothpick or a tapered steel pin. The picks are, in turn, mounted on boards. They are plugged into snap fasteners, or in holes in a board.

Wood has an advantage in holding power, as with its natural elasticity a bead can be wedged



Three tanks of pearl lacquer into which racks of beads are dipped and from which they are lifted slowly. Suspended above the middle lacquer tank is a rack of toothpick-held beads.

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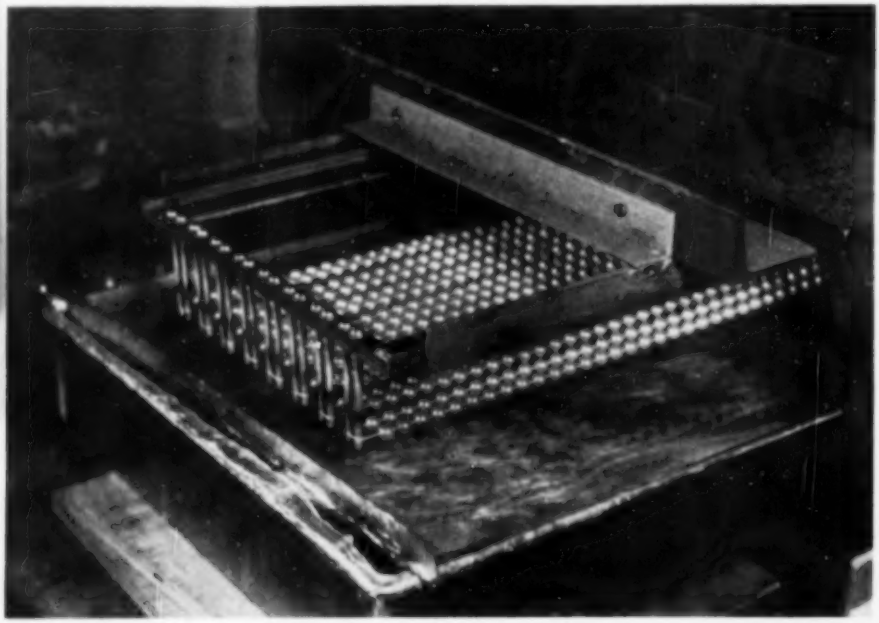
tightly and held, while the bead has to be driven on a metal pick and is often cracked or split. The advantage of a metal pick is that it can be cleaned by dipping it into thinner, and so may be used over again while wood gradually softens under this treatment. Another disadvantage of wood is that sometimes it breaks off in the bead.

The pearl solution should be stirred up an hour before dipping, then left to allow the air bubbles to come out. Mounted beads are carefully immersed in the pearl lacquer and then very slowly withdrawn. Precautions must be taken during the dipping to avoid forcing air into the solution by dipping too fast. This would produce air bubbles which might appear on the finished pearl and greatly detract from its appearance.

Machine Dipping Developed; Rate of Withdrawal Timed

Until ten years ago, pearl dipping was done by hand. While a skillful operator can produce good pearls, the rate of speed will vary with the fatigue of the operator, and the pearls will not be perfectly uniform. To remedy this, a hand-operated dipping machine was devised, which later gave place to an electrically-controlled one. With this machine the speeds are not only constant, but they can be varied at will. For example, a larger bead will draw up relatively more pearl lacquer than a smaller one. Therefore, either the viscosity of the solution



Rack of beads being dipped into pearl lacquer. The pull-out is slow and at a steady rate.

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must be lowered for larger beads, or preferably the speed of withdrawal must be decreased. To save time, beads can be dipped (down) faster, and then withdrawn at normal speed by means of a variable-speed device on the machine.

It is important to avoid drawing up an excess of lacquer (on each bead) as it is then difficult to get the lacquer to cover evenly, and "moons" result. To do a good job by hand dipping the excess pearl lacquer picked up by each bead must be removed mechanically. To accomplish this, after dipping, the entire board of pearls is tapped three or four times on a clean piece of paper to remove the excess. The slower withdrawal of the bead in machine dipping allows the excess lacquer to drain off naturally.

Dipped Beads in Multiple Slowly Turned While Drying

After dipping, the board of beads is put on a turning machine and revolved slowly until the lacquer dries. The principle involved here is to keep the lacquer flowing from hole to hole until it spreads and dries evenly.

A typical formula for a good grade of toothpick dipping pearl lacquer is as follows:

Lacquer: 4.3% 60-80 second nitrocellulose in amyl acetate. Viscosity, (before addition of essence) approximately 1000 cps. at 77° F.

Essence Concentration: 6-oz. per gallon.

Procedure: Three coats of pearl lacquer, followed by one coat of clear. The clear is tinted with Luxol Orange R. Beads introduced into lacquer at 2.4 inch per minute; withdrawn at 0.8-inch per minute, tapped, and rotated at 3-rpm.

String Dipping of Beads; Special Technique Used

The bulk of the pearls now made are string dipped. That is, a necklace already strung up to size or graduation, is dipped as a unit. The glass beads prepared in this fashion are generally imported. Plastic beads, made here, are sent abroad to be strung ready for dipping. The beads are strung on thread two or three times the length of the beads.

Only that part of the thread on which the beads are strung is dipped, and as this thread becomes stiff with lacquer, the beads are pushed onto the fresh portion of the thread, and the stiff thread is cut off. Another way to accomplish this is to dip the beads on a piece of double thread, or double wire, and then run a threaded needle through the loop of the string of beads, and slide the beads onto clean thread.

The strings are mounted on boards. These can be either a simple angle iron rectangle with holes drilled in it, through which the strings are passed and fastened to keep them secure while dipping is in process; or they can be elaborate ones with coiled springs for tying as shown in Fig. 2. In the latter machines, the thread is tied to one end, passed around an inwardly bent coiled spring and back, and tied to the inwardly bent adjacent spring. When the springs are released they spring back and hold the strings taut and prevent them from sagging. The beads are

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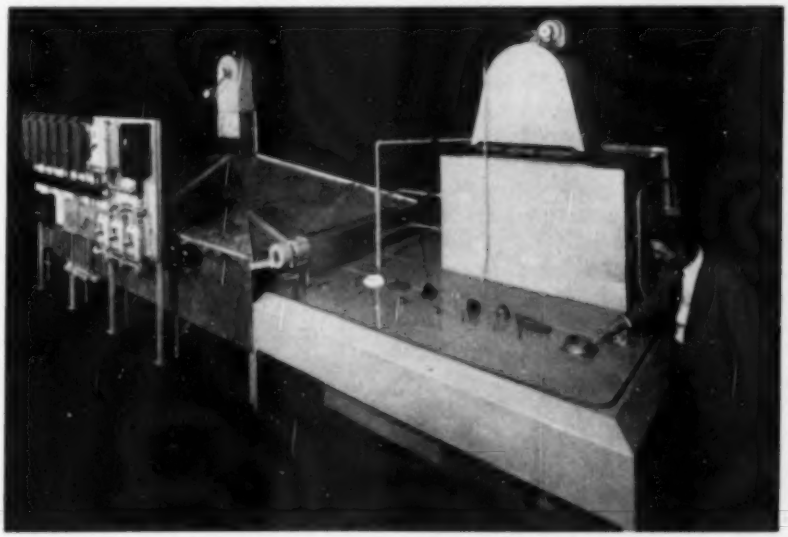

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then spaced approximately ¼-in. apart, either by hand or by a mechanical device.

The beads, if dipped loosely strung, would tend to slide together, either in dipping or in turning, so they are cemented in place. This is done either by coating the string and then putting the beads in place and holding them there until the glue or cement sets, or by dipping the boards into a cementing solution which will not be attacked later by the pearl lacquer.

The first solutions used for this purpose were water-soluble gums or gelatin. As these were slow in drying, cellulose acetate in acetone is the cement generally used. This material also has its limitation, as "blushing" occurs in humid weather, the adhesion is poor, and there is the usual fire risk of having acetone around.

A new method is to twist two pieces of wire (about .007-in. in diameter) together and to mount the beads on them. The torsion of the twist acts as a spring to keep the wires apart, which, in turn, exerts enough pressure against the beads to prevent them from sliding.

Pearl Lacquer Formulas; Detailed Procedure

Once secured on wires, the beads are dipped in any of the following solutions:

Method I

Bottom Lacquer: Cellulose nitrate 20-30 second (solvent amyl acetate) TS (total solids) 4.85%. Viscosity, 240-cps. (77° F. or 25° C.) which is increased to 440-cps. by the addition of Essence concentrated, 7-oz. per gallon. Amber tint.

Top Coat Lacquer: Cellulose nitrate 20-30 second (solvent amyl acetate). TS (total solids) 4.5%. Amber tint. Essence concentrated, 3½-oz. per gallon.

Procedure: Four coats of bottom; two of top.

Method II

CA Binder*: 5.12% TS high-viscosity cellulose acetate in acetone.

Lacquer: 20-30 second cellulose nitrate in amyl acetate. (TS 6.81%). Before use, this is diluted to 4.5-4.8% TS with amyl acetate in order to give a final pearl lacquer with a viscosity of 330 to 420 cps. (77° F.).

Essence Concentration: 6-oz. per gallon in bottom coat; 3-oz. per gallon in top coat.

Procedure: A coat of CA binder is applied, the strings being withdrawn from the lacquer at 3.5-in. per minute. The beads are dried for two hours without rotation. Four bottom coats and two top coats are used. Rate of withdrawal from the lacquer is again 3.5-in. per minute. While drying, the strings are rotated at 3-rpm., with the string parallel to the axis of rotation. 45 minutes are allowed between coats.

Method III

CA Binder: 3.8% high-viscosity cellulose acetate in acetone, with a viscosity of 31-cps. (77° F.) One gallon of this lacquer is thinned with ¾ pint of diacetone alcohol.

Clear lacquer for plastic beads: Cellulose nitrate 20-30 second (sol-

*This is really an adhesive (cellulose acetate) to prevent beads from sliding together.

vent, amyl acetate) with TS of 10.7% and viscosity approximately 1300-cps. (77° F.). Two parts of this lacquer are thinned with one part of amyl acetate.

Clear lacquer for plastic beads: 20-30 second cellulose nitrate lacquer (solvent, amyl acetate) with TS of 11.3% and viscosity approximately 1000-cps. Two parts of lacquer are thinned with one part of amyl acetate.

Essence Concentration: 8-oz. per gallon of undiluted lacquer, or 5⅓-oz. per gallon of diluted lacquer in either case.

Color: Dipping solution tinted with gold dye.

Procedure: After a coat of binder, three to four coats of pearl lacquer are applied, depending on the opacity of the glass bead. To dry, the beads are rotated at 10 to 12-rpm. A drying time of 40 minutes is allowed between coats.

There are countless formulas for varying conditions. The viscosity is changed for different size beads or variations in dipping speeds. The colors are influenced by the market. The formulas given have been used by manufacturers.

Machines for Rotating Beads While the Coating Dries

After the beads are dipped, they are dried on rotating machines. The motion smooths out the lacquer on the bead. Two different kinds of rotation are illustrated. In the illustration marked Fig. 3 the boards are turned so that the lacquer flows from hole to hole. This is ideal for getting an even pearl, but as can be seen, on every half turn the strings assume a vertical position, and unless the beads are well secured there is a tendency for them to slide together. In the illustration, Fig. 4, the motion always keeps the strings on a horizontal plane. This minimizes sliding, but if there is unevenness of flow the moon will show up badly around the shell of the pearl instead of being concealed at the hole by subsequent stringing.

As soon as the beads are sufficiently dry (usually after an hour) they should be slid onto their final string, as the lacquer is still soft enought to break away without tearing.

A new development, combining dipping and rotating machines, is a merry-go-round in design. Arms containing the boards radiate from a central pole. The boards not only revolve around the pole, but they in turn rotate on the arms. The pans containing the pearl lacquer are set on elevators. As the board comes around to the pan the revolving ceases; the rotation of the boards continues, except the ones immediately over the pans. The pans then come up to the boards and "dip" the pearls, then slowly descend, set off a switch and revolution begins again. The arms containing the freshly dipping boards also commence rotating, and the cycle is repeated as long as desired.

The remainder of this 2-part article will appear next month.

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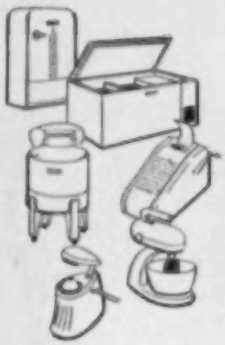

Alkalies, acids and other chemicals can play havoc with the toughest of ordinary finishes. The photographs above show two-coat systems on black iron buckets, using conventional appliance enamels, air-dry and baked . . . and SUPERCLAD. See what happened when the buckets were filled with 10% caustic soda and 10% sulfuric acid solutions!

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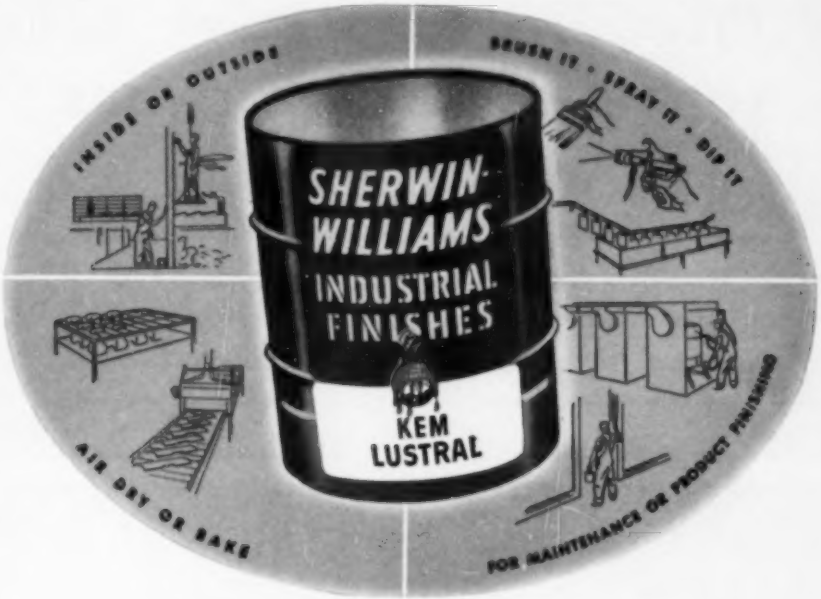

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Repainting PASSENGER CARS IN SOUTHERN PACIFIC SHOPS

By Fred Burt

How the Southern Pacific RR. repaints its passenger cars for protection and appearance; the surface preparation, matching colors, spray painting, masking, lettering and hand decorating.

Spray painting the masked surfaces outside and inside a Southern Pacific passenger car.

E. M. Griffin and J. S. Norris of the painting dep't. examining and comparing color cards.

MAINTENANCE of railroad passenger cars to protect them from the elements and to keep them attractive in appearance requires a wide variety of surface preparation and finishing operations.

In the paint department of the Southern Pacific Shops at Los Angeles, where most of the repainting of passenger cars is done, there are eight tracks in a building approximately 180x400-ft. Working 40 hours a week, from 8 to 10 passenger cars are painted inside and outside per month. The same number receive partial painting.

Surfaces Are Cleaned, Smoothed and Masked

To prepare the exterior suface of a passenger car for re-painting, the entire surface is washed with cleaning solution which is applied from a pressure tank. Then the washed surfaces are thoroughly rinsed with clean water. When dry, the surfaces are sanded with No. 180 grit sandpaper. All bare metal spots are touched up with metal primer. Scratches and identations are knifed in with lead putty.

Surfacer Coat; Sanding; Synthetic Enamel; Lettering

After the putty has dried the puttied spots are sanded smooth and the car is "dusted" to remove all traces of dust and lint from its surfaces; the glass now receives a coat of liquid masking preparation. After the paint job is dry this masking preparation is easily stripped off with a wide putty knife.

Upon completion of the surface preparation work just described, the car's exterior receives a coat of surfacer applied with spray guns. The surface is allowed to dry. Then the entire exterior is carefully ex-

Masking lower outside section of railway mail car with paper and tape. Windows are masked with liquid mask coating material.

amined for any rough spots. If any are found they are sanded smooth. The car is now ready to be spray-painted with synthetic enamel. This enamel is allowed to dry overnight before any lettering is applied.

Two methods of lettering are used. On conventional equipment gold leaf is applied. Streamline cars are lettered with synthetic enamel.

Paint pressure tanks are mounted on special carriers which were developed by the shop personnel. Each carrier is equipped with air cleaner, pressure regulator and pressure gauges to insure uniform pressure on the paint tank as well as at the spray gun. Compressed air is furnished to all of the shops by two 1730-cu. ft. capacity air compressors located in the central power plant. [*To pages 40 and 42*]

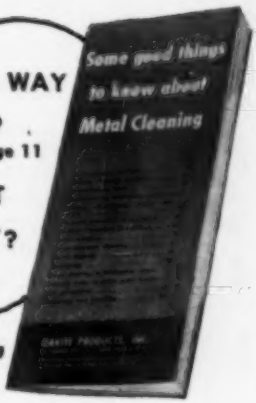
Interior of car masked and ready for refinishing. Notice the V-shaped metal shield above.

Oakite's New FREE Booklet

"Some good things to know about Metal Cleaning"

WHAT'S THE FASTEST WAY TO CLEAN METAL? See page 11

WHAT'S THE MOST ECONOMICAL WAY? See page 9



answers many questions that mean better production for you, more money in your pocket. You'll want to read more about:

Can one cleaning material do all metal-cleaning jobs? See page 5.

What kind of cleaner attracts both oil and water? How does this help to remove buffing compound residues and pigmented drawing compounds? See page 8.

What are the advantages of reverse current for electrocleaning steel? See page 15.

Can you electroclean brass without tarnishing? See page 18.

Can you clean steel and condition it for painting for less than 20 cents per 1,000 square feet? See page 26.

Would you like a cleaner that removes rust and oil in one operation, often eliminating all need for pickling. See page 28.

Does your burnishing barrel produce a luster you are proud of? See page 32.

FREE For a copy of this 44-page illustrated booklet, write Oakite Products, Inc., 32F Thames St., New York 6, N. Y.

Technical Service Representatives in Principal Cities of U. S. & Canada

OAKITE SPECIALIZED INDUSTRIAL CLEANING MATERIALS • METHODS • SERVICE

IX. TYPICAL PAINTING SCHEDULES (*For Exterior Finish Only*)

Note—Schedules shown below are the **MINIMUM** time that must be allowed to comply with instructions in this circular. Schedules may be lengthened, if necessary, but **MUST NOT BE SHORTENED.**

DAY	CONVENTIONAL DARK OLIVE STEEL EQUIPMENT		STREAMLINED MULTI-COLORED EQUIPMENT	
	Complete Job	*Repaint*	*Complete Job*	*Repaint*
1st	Sandblast surfaces and prime.	Clean surfaces & dry sand.	Remove finish from surfaces.	Clean surfaces.
2nd	Apply 1st surfacer, Putty and glaze.	Spot prime, putty & glaze.	Prime surfaces, putty & glaze.	Spot prime, putty & glaze.
3rd	Sand, apply 2nd surfacer. Sand as necessary.	Sand	Sand	Sand
	———	Apply surfacer. Sand as necessary.	Apply surfacer. Sand as necessary.	Apply surfacer. Sand as necessary.
4th	———	Apply 1st & 2nd color coats to body.	Apply 1st & 2nd color coats to body. (1st color)	Apply 1st & 2nd color coats to body. (1st color)
5th	Apply 1st & 2nd color coats to body.	Apply 1st & 2nd color coats to roof.	Apply 1st & 2nd color coats to body. (2nd color)	Apply 1st & 2nd color coats to body. (2nd color)
6th	Apply 3rd color coat to body.	Letter & number. Do miscellaneous painting.*	Apply 1st & 2nd color coats to roof. Apply striping.	Apply 1st & 2nd color coats to roof. Apply striping.
7th	Apply 1st & 2nd color coats to to roof.	Letter & number. Inspect & touch up.	Letter & number. Do miscellaneous painting.*	Letter & number. Do miscellaneous painting*.
8th	Letter & number. Do miscellaneous painting*.	———	Letter, number, & stripe. Inspect & touch up.	Letter, number, & stripe. Inspect & touch up.
9th	Letter & number. Inspect & touch up.	———	———	———

* Painting of trucks, underframe, tanks, vestibules, steps, etc., to be worked into schedule to suit local shop conditions.

Schedule for surface preparation and repainting on Southern Pacific passenger cars.

Not Only Chemicals
But "Know How" Too
When
You Buy... **SURPHOS**

The Metal Phosphating Chemical
that Prepares Metal for Painting

SURPHOS

Is Easier to Use: dissolve in hot water to a concentration of one ounce per gallon and apply to metal by dipping or spraying. Acid proof equipment not needed.

SURPHOS CLEANS . . . FORMS PHOSPHATE COATING . . . PREVENTS RUSTING DURING STORAGE . . . IMPROVES ADHESION OF PAINT . . . INCREASES HUMIDITY and SALT SPRAY RESISTANCE of PAINT

Our Experts Will Help You "Set Up" Your System and KEEP it working . . . .

INDUSTRIAL CHEMICAL PRODUCTS CO.
3778 BELLEVUE AVENUE DETROIT 7, MICH.

In Canada made and sold by Boyle Chemicals Ltd., Windsor, Ontario

Preparation of Interiors; Spray Painting; Decorations

To give some idea of how the interiors of passenger cars are painted and decorated, I have selected a streamline chair car, with sealed windows which are not removed. Before the car enters the paint department all interior furnishings are removed. The inside surfaces are thoroughly washed, rinsed and allowed to dry. Metal shields are placed over the light and air-conditioning duct which extents lengthwise along the center of the ceiling from end to end of the car.

All windows and mirrors are masked with craft paper held in place by masking tape. Once it is masked, the entire surface is sanded smooth; then the car is "dusted" and "blown out" to remove all traces of dust. It is now ready to receive the interior colors. Synthetic enamels in various color combinations are used on car interiors. Seat numbers and lettering are applied with decals. In some cars murals and scenic wallpaper are applied to both end walls of the main room.

Paint Supply and Mixing Room

The paint supply and mixing room is clean, orderly and well equipped. It contains power mixers and storage cabinets for used paint brushes. On one wall of this room is a large black board that bears the identification numbers of cars

A corner of the room in which painting and finishing materials, supplies and equipment are kept clean and orderly, and made ready for use in the shop. William A. Russell in charge.

"Shecks, Gran'maw . . . let the little feller have some fun . . . it's finished with VEDOC"

Nothing, practically *nothing*, can hurt that hard-wearing, one-coat baked finish! It's highly scuff-resistant, practically immune to soaps, alkalies, detergents, fats, grease and moisture. Sanitary and easy to clean, Vedoc is the perfect finish for a wide range of products. In white or pastels. Baking time: 20 minutes at 300° F. or 7 minutes with Infrared Drying. Write for samples and prices today. Your order—for gallon quantities or for carload lots—will receive our immediate attention.

Remember, Ferro Is Set Up to Provide Complete Organic Coatings Service. From the Development of Specialized Coatings to Designing and Installing Efficient Finishing Oven Systems.

FERRO **ENAMEL CORPORATION**
LIQUID PLASTICS DIVISION
4150 East 56th Street • Cleveland 5, Ohio

Vedoc

sent in for re-painting, together with full color scheme, both interior and exterior.

To obtain color combinations the color numbers are shown for ceilings, side walls and the main room, rest rooms and hallways. These color numbers are part of a color control system and they are identical with the color cards that are submitted to suppliers of paint.

Regardless of when a passenger car was built and placed in service, its original colors may be duplicated in re-finishing or new colors may be used. New color combinations are developed from time to time and new cards are issued. This control board leaves nothing to chance. It is a valuable adjunct to any finish-room in which this type of finishing is done.

Spray Cleaning Setup for Metal Parts

By G. C. Close

WHEN and if you have a type of work that calls for cleaning individual parts or products with solvent pressure spray, here's an idea borrowed from Pacific Airmotive Corp., Burbank, Calif.

A manifold pressure system, developed by company engineers, circulates used solvent from the booths, through a filtering system, then back to the booths again as required. This filtering and re-use of the solvent results in a saving that amounts to thousands of gallons per month.

To reduce fire hazard, the manifold pressure system is so arranged that not more than one quart of cleaning solvent can be in a booth at one time. The accompanying picture shows a quart container in one corner of the booth. If the manifold supply is not shut off when the container is full, the excess solvent runs over, spills through the grating and flows back into the main supply system.

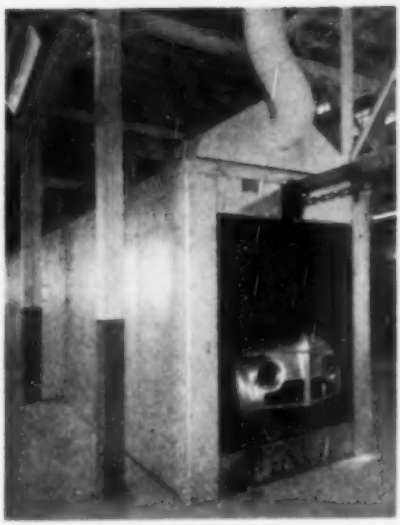
Used solvent drains through grating and is returned through filters to supply system.

Several small cleaning booths like this are located throughout the plant. This company overhauls airplanes for many major airlines, and workmen are continually faced with cleaning one or two parts at a time.

Woods Named President of Commercial Solvents

J. Albert Woods was elected President of Commercial Solvents Corporation at a special meeting of the Board of Directors, early in April, 1950. Prior to coming with Commercial Solvents, Mr. Woods was President of Wilson & Toomer Fertilizer Co., manufacturer of heavy chemicals, fertilizers and insecticides. He has also been a Vice President and a Director of the Armour Fertilizer Works, President of Chilean Nitrate Sales Corp., and a Vice President of W. R. Grace & Co.

Our know how + Your needs = Better Ovens for You



FOR BETTER FINISHING IN YOUR PLANT . . . IT'S

YOUNG & BERTKE OVENS

EVERY TIME

As experts with years of practical experience in the design and installation of ovens and finishing systems, Young & Bertke engineers offer you practical help. No oven problem is too large or too small. Young & Bertke has designed and installed literally hundreds of ovens and finishing systems, from small laboratory testing ovens to the largest type conveyor ovens.

You are under no obligation when you consult us on your problems. We are glad to give you our advice and assistance.

Whatever Your Finishing Needs

- Baking
- Drying
- Japanning
- Lacquering
- Enameling
- Rack
- Conveyor
- Vertical Type
- Horizontal Type
- Tunnel

Ovens—Fume Removal Systems—Spray Booths

The YOUNG BERTKE Co.

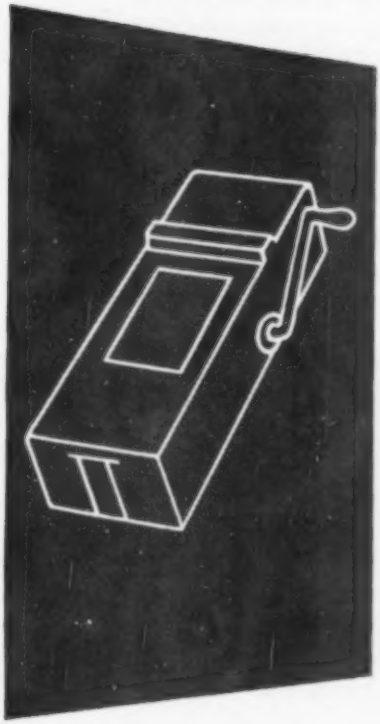
1126 BUCK STREET CINCINNATI, OHIO

LOWE BROTHERS

✻ In this case, Lowe Brothers made two finishes to meet the manufacturer's requirements. Lowe Brothers Wrinkle Finishes and Enamels are being used today on a broad range of products from typewriters and safes to fans and sewing machines. Whatever *your* product, a quality-made Lowe Brothers Industrial Finish is your full assurance of *efficient* production and *excellent* finishing results.

"FINISHING SPECIALIST"

simplifies manufacturer's production—saves thousands!



This advertisement is based on facts from the Lowe Brothers Industrial Case History Files.

A nationally famous register manufacturer had the complicated finishing problem of running both wrinkle and smooth enamel finishes through the *same* oven at *same* baking temperature at *same* time, without harming the appearance of either finish. Not only did a Lowe Brothers "Finishing Specialist" "come up" with two finishes* that would do the job, but he also vastly reduced handling costs by developing a streamlined system whereby products moved on a conveyor from shop — through cleaning, spraying, baking and cooling operations — to packing line! This company is saving thousands of dollars a year as a result—and is enjoying greatly stepped-up production as well!

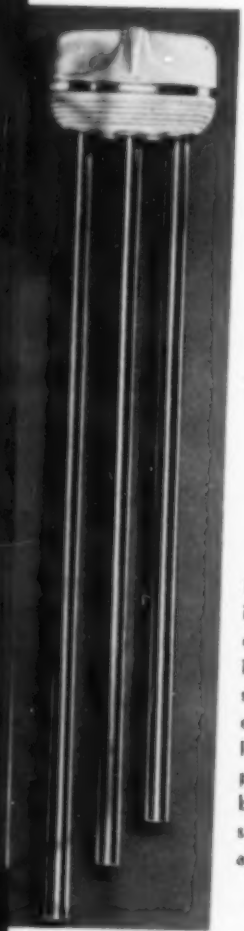
. . . Another typical case where it paid to have a Lowe Brothers "Finishing Specialist" apply his knowledge and experience to *all* finishing problems. There is no cost or obligation for this service. Have a "Finishing Specialist" analyze *your* operation. Write today.

THE LOWE BROTHERS COMPANY • DAYTON 2, OHIO

LEADERSHIP THROUGH CONSISTENT SERVICE

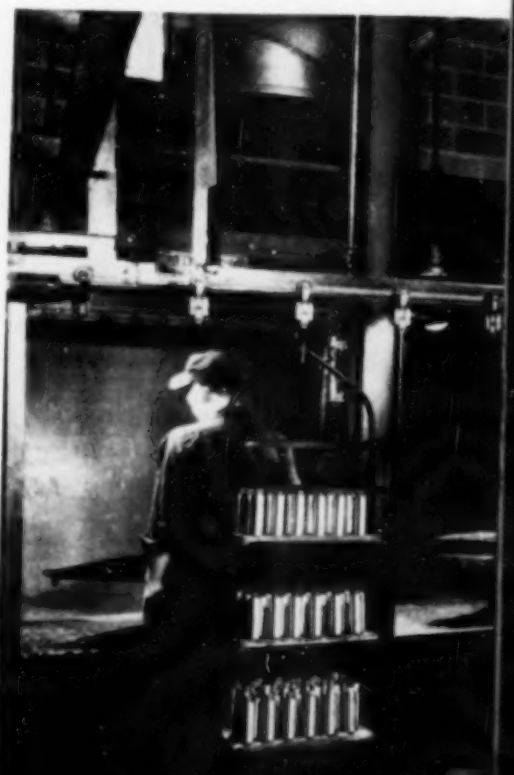
Lowe Brothers FINISHES FOR INDUSTRY

Finishing DOOR CHIMES



EVERY PART of a door chime, from the push button to the back plate and cover, must be coated with a durable finishing material. A high quality finish is necessary for protection of the metal surfaces and for decorative purposes. This also applies to our other products, which include kitchen ventilators, electrical house numbers, name plates, door knockers, etc. These products are distributed and sold in all parts of the country, so they are likely to be in service under any one or more of several different kinds of climatic conditions, ranging from the hot humid air of the near tropics to the salty atmosphere of seaboard areas.

The finishing room in our plant was not an afterthought. It was designed and built specifically for that purpose, and it is completely air-pressurized. In other words the air pressure inside the finishing room is greater than the air pressure elsewhere in the plant.



View in pressurized finishing room; spray booths are in background; overhead cable conveyor moves along in front of them, carrying spray painted parts and dip-coated brass tubes to oven. In the foreground, opposite page, short brass tubes are being dipped into a clear synthetic finish; then they are set vertically on racks.

By

WILLIAM R. CUTTER

Production Manager
NuTone, Incorporated

AT THE NUTONE FACTORY

Fresh air from outside our new building — a volume of air in the amount of 30,000-cu. ft. per minute —is drawn in from the outside by fans and passed over thirty 20x20-in. washable filters. Then the filtered air moves through steam coils which heat it sufficiently to maintain a room temperature of 72° F. The heating setup is thermostatically controlled.

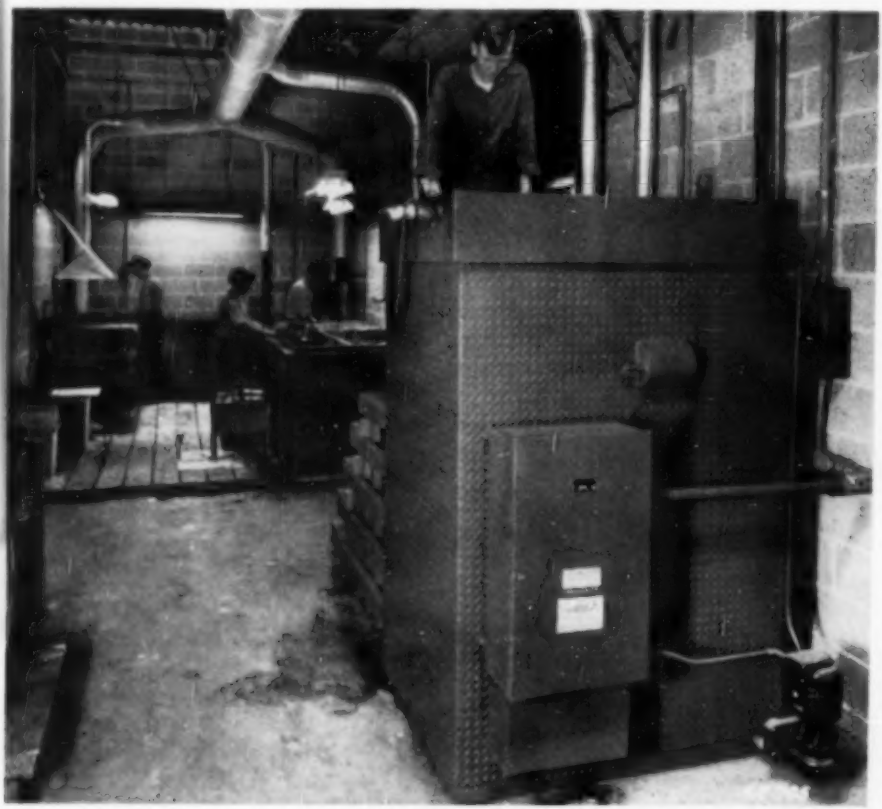
Exhaust fans remove a total of 20,000-cu. ft. of air per minute from the finishing room. With 30,000-cu. ft. of air coming in, and only 20,000-cu. ft. of air being removed by exhaust fans, there is a surplus of approximately 10,000-cu. ft. of air per minute in the room. This surplus is what builds up and maintains air pressure in the finishing room. The resultant pressure is sufficient to keep out all dust and foreign particles by permitting the surplus air to escape (flow outward) through two conveyor openings and two room doors. This cleaning, heating and pressurization of air in the finishing room is highly important wherever a fine quality finish is desired. No incoming drafts of air can carry in dust, lint or other particles that might come in contact with

wet coated surfaces. Fume-laden air is also exhausted from around the dip tanks where brass tubes are hand dipped in clear synthetic finishing material.

Water Wash Spray Booths; Dipping Facilities

We have two 8-ft. water curtain spray booths, each of which is divided into two sections so we really have four 4-ft. spray booths. We also have two portable dip tanks and drain pans for hand dipping short brass tubes, and a metal-enclosed room where the long brass tubes are hand dipped.

The enclosure in which long brass tubes are dipped is necessary to reduce the air circulation so that the long dipped tubes, placed upright, will drain properly after they have been dipped. In this enclosure sufficient air is exhausted to remove all fumes of the synthetic material and still provide an air balance to assure proper drainage of dipped coating material.



In the metal cleaning room, overhead exhaust piping removes fumes and vapors. The vapor degreaser is in right foreground. Photograph, courtesy of Kirk & Blum Mfg. Company.

[TO PAGE 52]

HOOVER SAYS...

"SPECTACULAR"

The Hoover Company, world-known for quality electric cleaners, reports on Electrostatic Spray:

"To maintain the quality standards of our wrinkle finish with hand spray, most of the time only 75% of our production would pass our inspection.

"Now Electrostatic Spray produces superior quality wrinkle coatings on almost 100%."

Avail yourself of Electrostatic Spray's uniformity and efficiency. Write today for helpful literature showing how you can improve quality and save 40 to 60 percent on coating materials.

RANSBURG

RANSBURG ELECTRO-COATING CORP.

Indianapolis 7, Indiana

Overhead Cable Conveyor; Variable-Speed Drive

The overhead cable conveyor is 200-ft. long and has hangers spaced at 12-in. intervals. It passes along in front of the spray booths, as shown in one of the illustrations with this article. This arrangement permits the conveyor to serve both the spray finishing and dip coating operations. The ⅜-in. steel cable conveyor travels at a speed of 3½-ft. per minute.

We selected this particular type of conveyor because of the diversity of products it will carry. Some of the conveyor racks have only light loads. Interspersed between these lightly loaded racks may be one or more racks loaded with long brass tubes (as shown in one of the illustrations) or other parts that have considerable weight.

This cable conveyor provides a positive, uniform, surge-free forward motion, regardless of weight distribution. Carrier racks are supported from every fourth hanger. The three hangers between racks are used for hanging individual items such as kitchen exhaust-fan housings and other products in our line. Conveyor is driven through a variable-speed drive which provides a speed range of 3-ft. to 8-ft. per minute.

Oven 6-ft. Above Floor; Ventilation; Heat; Time

The baking oven is 13-ft. wide, 27-ft. long, and its under side is elevated 6-ft. above the factory floor. It is indirect gas-fired and is adjusted to use 25% fresh filtered air and 75% recirculated air. The oven has air locks at the entrance and exit to counterbalance air pressure from the finishing room and to prevent any escape of heat. Approximately 1100-cu. ft. of solvent-laden air per minute is exhausted from the oven within a space of about five feet from the entrance.

Close-up of motor and the mechanism that drives steel cable conveyor. The rim of the drive sheave is notched to receive hangers while the cable fits into a groove. Photo, courtesy of Kirk & Blum Mfg. Company.

With a conveyor speed of 3½-ft. per minute, all parts in process are in the oven for a total of 30 minutes. The total oven time includes five minutes for pre-heating at and near the entrance end, 20 minutes for baking at 300° F., and five minutes for cooling next to the exit end of the oven. Every metal part, whether it is coated with enamel or clear synthetic material, goes

Proved

IN OVER 7,000 PLANTS

PRODUCTION COSTS LESS WITH FOSTORIA EVENRAY

HIGHEST EFFICIENCY FOR FINISH BAKING

- **Lowest Unit Operating Cost**
- **Most Uniform Coverage**
- **Max. Temperature Range**
- **Max. Energy Utilization**
- **Greatest Flexibility**
- **Finest Engineering**

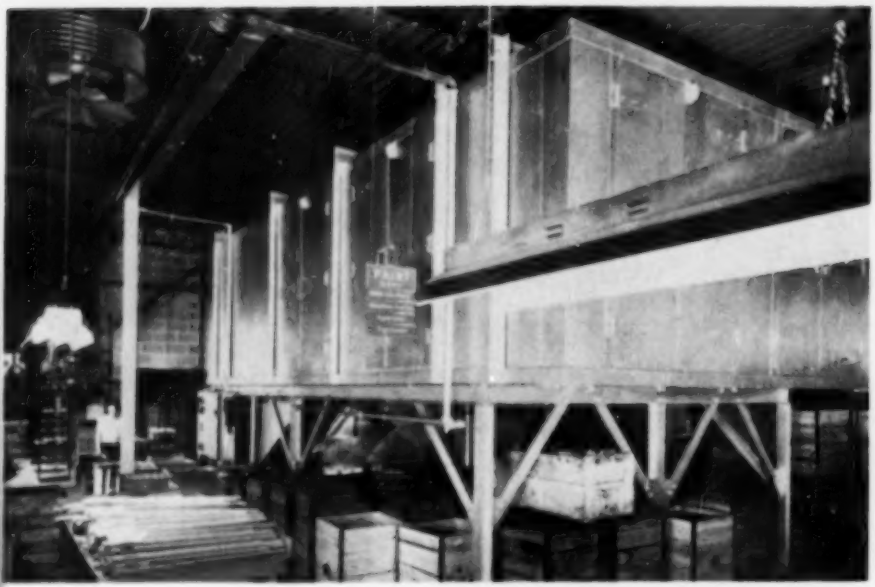
Proof that Fostoria engineered infra-red equipment obtains maximum energy utilization is turning up every day in customers reports like this—"Installation of infra-red baking ovens has reduced drying time for products manufactured by Phil R. Hinkley Co., Cleveland, to about one-eighth the time required by former methods" — (as reported by the customer in Electrical Production magazine). See their installations in photo above. Lower production costs per piece result in such cases. Over 7,000 plants are now profiting with Fostoria Evenray. A Fostoria engineer will gladly analyze your needs, without obligation.

— GET THE FACTS

Technical information and descriptive literature are available on request. WRITE NOW. Learn how EVEN RAY can lower your production costs.

THE FOSTORIA PRESSED STEEL CORP.
FOSTORIA, OHIO
Oldest and Largest Manufacturers of Industrial Infra-red Ovens

EVENRAY SYSTEM
fostoria
FOR BAKING • DRYING • PREHEATING • DEHYDRATING
Trade Mark Reg. U. S. Pat. Off.



Overhead oven appears in right foregrouund. Notice how space under it is utilized for temporary storage of parts in process. Photograph, courtesy Kirk & Blum Mfg. Company.

through the baking oven. Materials are now formulated for a 20-minute bake at 300° F.

Metal Parts Cleaning; Chime Tubes Sanded

Preparing the various metal parts for application of protective and decorative coatings is very important. With the exception of brass chime tubes, all brass, steel and aluminum parts are put through a 2-stage electric perchlorethylene vapor and liquid degreaser.

Short brass tubes are cleaned and given a satin finish on an automatic belt sanding machine as the tubes revolve in contact with a belt of No. 220-grit emery cloth.

All other brass, aluminum and steel parts are immersed in a hot perchlorethylene solution and then suspended in the vapor zone to clean them perfectly for spray painting or finishing. The boiling point of perchlorethylene is approximately 254° F. The temperature of the solution is maintained at about 180° F., and the vapor section is electrically heated to form the vapor. This degreaser has no water jacket or cooling zone since the heighth of the vapor in the machine is maintained by a thermostat actuating the electrical heating elements.

Chime Tubes Dipped; Other Parts Sprayed

Both long and short brass tubes are hand dipped into clear synthetic finishing material which

Satisfaction

IN

LACQUER THINNERS

"20 million gallon reasons why we lead the field"

BARKER

BARKER CHEMICAL COMPANY

One of America's Largest Manufacturers of Lacquer Thinners

2258 SOUTH UNION AVE. CHICAGO 16, ILLINOIS

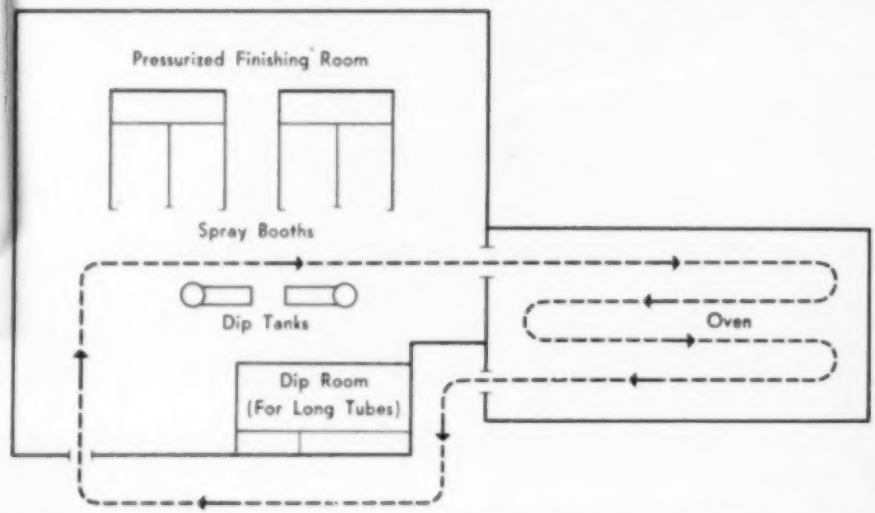
coats both inside and outside. The hand-dipped brass tubes are placed on expanded flat spring pegs where they drain while in a vertical position. After a rack of dipped tubes has drained it is placed on a conveyor carrier and moved through the bake oven where the finish is baked for 20 minutes at 300° F.

Brass name plates, push buttons, door knockers, etc., are individually placed on wire screen trays and sprayed with a clear synthetic finish. Then these loaded trays are placed in tiered conveyor racks to go through the oven.

Pressed steel chime covers are also placed on wire mesh trays for spray painting. These covers are finished in white and ivory. Other covers receive a simulated walnut decal.

For one design, flat metal sheets are given a spray coat of special brown lacquer, and while this coat is still tacky, the walnut decal is pressed on by running the sheets between rubber rolls. Then the de-

Machines where brass tubes for door chimes are sanded by abrasive belts to clean them and produce "satin finish." K. & B. Mfg. Co.



Dotted line shows overhead cable conveyor from which racks of coated parts are hung to be run through the oven. This room is "air pressurized" so no dirt or dust can enter by air.

washing
rust proofing
spray painting
flo-coating
baking
CUT
Production
COSTS!
the time is NOW
The great race for expansion is over—
Emphasis is now on Improved Products
and Processes.
If your concern is a better product
finish, the addition of new equip-
ment, the rearrangement of present
equipment or a
COMPLETE NEW FINISHING SYSTEM,
do not hesitate in contacting our nearest
field engineer.
See our brochure in Sweet's
Mechanical Industries File.
complete
finishing
systems
For Finer Finishing Equipment — See Your Industrial Yellow Pages
PETERS-DALTON Inc.
17515 KINSMAN ROAD
DETROIT
WHIRL

cal-covered sheet of metal is immersed in water for about a minute to loosen the decal's paper backing. With this paper backing removed, the panel is wiped and its edges are lightly sanded to trim off any excess decal. Then the clean decaled sheets of metal are placed on conveyor racks to go through the bake oven. When they cool they are sent to the fabricating department where they are deep drawn and formed into chime covers.

Walnut decals, made to special size and shape for die-cast chime covers, are applied by hand to the brown lacquered casting while the surface is slightly tacky. They are wiped, trimmed and baked in the oven for 20 minutes at 180° F.

Color and Hammered-Effect Finishes Sprayed and Baked

Base plates that cover the backs of chime covers receive spray coats of black, bronze, aluminum and brown synthetic enamel.

Electrical house number plates are given a gray hammered finish. This is sprayed in one operation and baked in the oven the same as the other finishes.

Kitchen ventilators are cleaned as described for other products. Then they are sprayed with an air-drying zinc chromate primer. After air drying for six minutes on the conveyor the ventilator parts are sprayed with white or gray and put through the oven according to the standard baking schedule.

Atlas Powder, Finishes Division Announces Appointments

Charles W. Blacketer is appointed Technical Director of the Stamford, Conn., branch of Atlas Powder Co's Industrial Finishes Department according to an announcement by G. B. Work, General Manager.

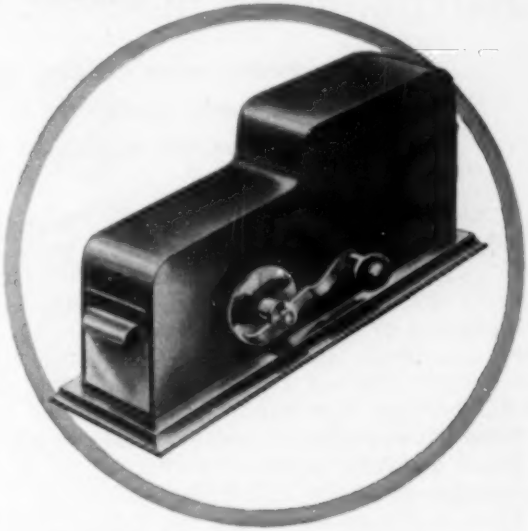
Charles W. Blacketer and Guido Ariotti

Guido Ariotti succeeds Mr. Blacketer as Manager of the Customer Service Department.

Mr. Blacketer came with the company last year as Manager of Customer Service after extensive experience with two other large manufacturers of finishing materials. He attended the University of Chicago and is a member of the Federation of Paint & Varnish Production Clubs, the American Chemical Society, American Society of Testing Materials.

Mr. Ariotti completed 25 years service with Atlas last year, all spent with the Zapon Industrial Finishes Department. He has specialized in laboratory and field service on all types of product finishes.

An Ounce of ZAPON Is Worth a Pound of Cure...



ONCE the wrong finish has disrupted your whole production line, irritated you and your customers, and piled up costs and rejects, finding a remedy can be a tough, frenzied task.

ZAPON industrial finishes can *prevent* such troubles because each finish is carefully formulated to meet *your* finishing requirements and operations.

ZAPON Development and Customer Service Departments offer you years of practical knowledge and technical training. When you have a problem in finishing, let us tackle your troubles.

Service from every angle . . . that's

ZAPON

REG. U.S. PAT. OFF.

ATLAS POWDER COMPANY

Industrial Finishes

Stamford, Conn. • North Chicago, Ill.

Harmony in Grays...
FOR INDUSTRIAL EQUIPMENT

Fewer color shades, more color harmony coming up in standard industrial equipment finishes.

FIRST UNIFIED efforts of industry to reduce the number of colors for industrial apparatus, machines, and equipment are beginning to bear fruit as a result of unanimous agreement on four accurately defined grays as standard finishes. American Standards Association announces adoption of these standard grays following a consensus reached by 18 organizations and groups who represent all classes of manufacturers and users of such equipment.

General acceptance of this new standard on "Gray Finishes for Industrial Apparatus and Equipment" (ASA Z55.1-1950) by individual manufacturers and purchasers of industrial equipment and machines is expected to reduce considerably the cost of finishes and finishing. It will be of further value to purchasers of equipment by making it easier to specify and to match grays, and to produce color harmony of machines and other equipment purchased from different manufacturers. Color guides are expected to eliminate haphazard choice of shades from the limitless possible shades variations.

The value of this simplification is shown by the experience of several manufacturers of electrical equipment who have had to stock more than 100 different shades of gray to satisfy customers. One manufacturer reported using 60 shades on a single type of equipment. Manufacturers of paint and finishing materials may also be able to economize in production and lowered inventories through application of the standard.

Value of Simplification Shown by Experience

The development of color standards stems from past trouble in color identification and lack of standard color finishes for industrial products. Where master colors had been used, variations grew out of differences in formulation and aging, variations in tolerance limits, and infrequent or no comparison with master colors. Use of color names or paint number also have obvious disadvantages. The need for standard colors became acute at the start of World War II as a result of extensive subcontracting. Attention focused on this need resulted in a study of grays.

Further investigation of the possibility of effective standardization of industrial colors led to a request by industry to the American Standards Association in November, 1946, that a standards project be

(Continued on page 64)

New Monsanto enamel recommended when all that glitters is Sold

HIGH GLOSS is *most* important to finishers...of **vending machines, toys, clocks,** or what is your product?...for quick consumer appeal, more sales.

Monsanto research has developed a **NEW SYNTHETIC ENAMEL** in white and bright colors with outstanding high gloss...and excellent color retention.

You won't have to worry about ups and downs in the quality of your shipments. Monsanto does a series of "watchdog" tests on every batch. No shipment gets a passing mark unless it gives you all of these qualities:

1. High gloss
2. Non-chipping, mar-resistance
3. Excellent adhesion, flexibility
4. Short baking cycles
5. Good coverage
6. Moderate price for high quality

VOLUME USERS—give your finishes a shine, and your sales a boost, with Monsanto's new "quality-controlled" enamels. Send *today* for full information on Monsanto synthetic enamels for your mass-production items. The coupon is for your convenience.

MONSANTO
CHEMICALS—PLASTICS

SERVING INDUSTRY... WHICH SERVES MANKIND

MONSANTO CHEMICAL COMPANY
Merrimac Division, Dept. IFM9
Boston 49, Mass.

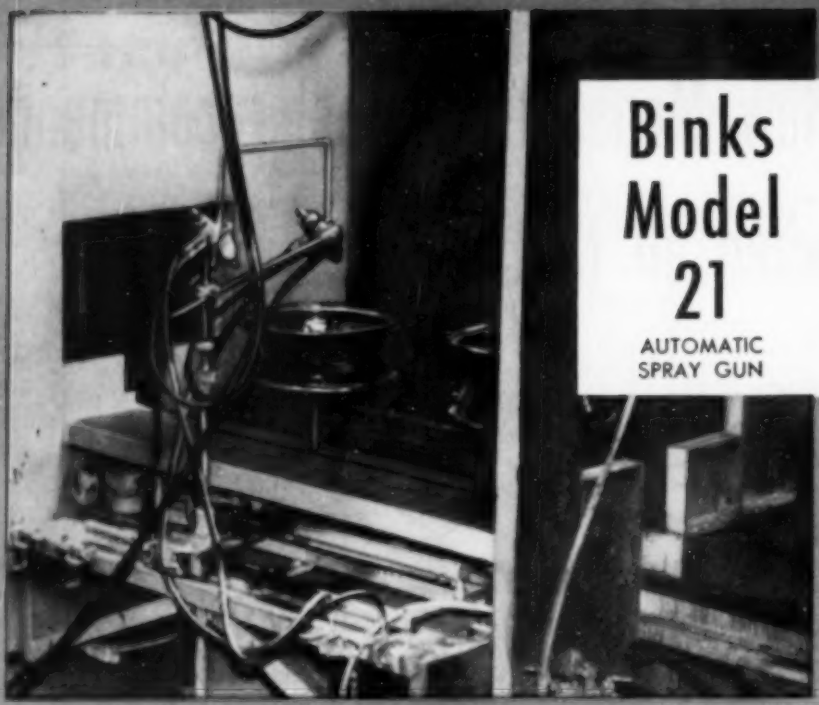
Please send me information on Monsanto synthetic enamels for my product.

Name & Title _____

Company _____

Address _____

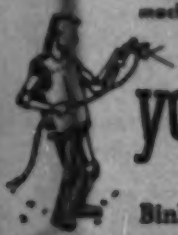
City, Zone, State _____



Binks Model 21

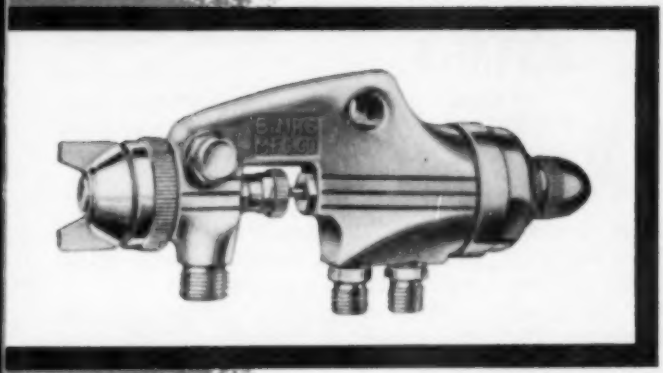
AUTOMATIC SPRAY GUN

A Binks automatic spindle machine for finishing auto wheels. The product being finished is open in front of one or more Binks Model 21 automatic spray guns. Binks spindle machines automatically finish round, cylindrical, or many-side products... inside and out.



you'd swear this robot is human

Binks Model 21 heavy-duty, automatic spray gun introduces new economies into your finishing department...and at the same time, it increases your production. With virtually no supervision, the Binks Model 21 operates day after day with robot precision. Without tiring or becoming temperamental, it quickly applies coatings of precise film thickness. No other method of finishing gives such accurate material control...such uniform, low cost finishing.



Binks Model 21 **is a heavy-duty automatic spray gun for applying fine finishes. It turns on and off pneumatically. Fluid nozzles of specially hardened steel give long service. Needle valve is adjustable to compensate for wear and is self-centering on a tapered seat. Air leakage is eliminated. It starts instantly...with no dripping ...no spitting.**

painting a many-sided product in one operation

When used as part of a Binks automatic spindle machine, this remarkable gun finishes all sides of a product in one operation, including interiors in many instances. The product to be finished is mounted on moving spindles which rotate as they pass before the guns. The Model 21 starts automatically and sprays only long enough to apply a perfect coating to the product before it. It cuts off automatically between units and does not spray when empty spindles pass, thus saving paint.

test automatic finishing on your products without cost

Send or bring your product to Binks Testing Laboratory. Binks engineers will study your finishing problems and give you a complete report...all at no cost to you. Or visit the laboratory and see this modern equipment in action.

"Our major objective is to help you reduce your finishing costs and, at the same time, aid you in producing the finest possible finishes."

J. J. Roche
Chairman of the Board

Send now for literature describing the Model 21 gun...also Binks automatic spindle and reciprocating machines.

Binks MANUFACTURING COMPANY

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NEW YORK • DETROIT • LOS ANGELES • ATLANTA • BOSTON • CLEVELAND
DALLAS • MILWAUKEE • NASHVILLE • PHILADELPHIA • PITTSBURGH
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Name	Number	Munsell Notation
Light Gray	61 Gray	8.3G6.10/0.54
Medium Light Gray*	49 Gray	10BG4.90/0.60
Medium Dark Gray	33 Gray	7.8B3.30/0.94
Dark Gray	24 Gray	10B2.40/1.18

initiated. ASA organized a committee whose membership includes representation of industry, government, and color experts. By much discussion and compromise the committee arrived at the present American Standard.

Four Grays Specified . . . . Light to Dark

Each of the four grays may be specified by a name or a number given above. The numbers indicate the approximate degree of lightness and darkness of grays. Munsell notation for hue, value and chroma accurately identifies each color.

Contrary to the popular conception of grays, they are not necessarily variations in proportions of black and white. They may be light or dark colors with low or weak chroma (less than 1.5). Actually Light Gray is a green, Medium Gray is a blue green, and Medium Dark and Dark Grays are blues under the more discerning "eye" of a spectrophotometer.

Spectro-photo-meter Identifies Colors

The spectrophotometer is the basic instrument for identifying color, in accordance with an earlier American Standard on the "Specification and Description of Color" (Z44-192). Munsell notations are derived from measurements made with this instrument.

Munsell notations were adopted for identifying opaque coatings such as paint because basic color measurements made with the spectrophotometer are not suitable for general industrial use. Munsell notations have been calibrated against the basic measurements made with the spectrophotometer and have been codified by means of color samples for easy reference in the Munsell Book of Color published by Munsell Color Company.

Check Colors Regularly; Gloss and Texture

Color chips of the standard grays are also available from ASA for use as masters for inspection by a visual comparison method appended to the standard. Use of color chips as secondary standards requires certain precautions because of possible deviation from the true standard. This may be caused by fading under strong light, accumulation of dust, dirt or grime on the surface when left uncovered, or by chemical changes of pigments or papers on which colors are applied.

The new American Standard gives limits of accuracy within which the colors of secondary standards should be held. Because of possible changes with age, color chips should be checked at regular

*Closely approximates Machine Tool Gray (7B), a standard of the National Machine Tool Builders' Association.

LOOK GOOD?

Barbecued chicken a la Johnson really IS good!

. . . It's good for the Kirker Chemical Company, makers of the attractive, protective enamel which caught Mr. Johnson's eye and caused him to consider the "Campick" grill *first*.

. . . It's good for Jack's Hardware on South Avenue, which displays the "Campick" grill prominently in its window. Jack expects to show a tidy profit on this item.

. . . And it's good for the Wallkill Machine Works, Inc., of Walden, N. Y., manufacturers of this popular grill, who depend upon Kirker for finishes which sell the "Campick" and keep it sold!

Your product, too, will move faster under a Kirker finish custom built to your specific requirements.

KIRCO MODERN COATINGS

Kirker CHEMICAL COMPANY

ONE EAST ELEVENTH STREET • PATERSON 4, NEW JERSEY

intervals and replaced if necessary. The standard does not specify requirements for accuracy of color finish on the equipment to which the finish is applied. Color finish of equipment is affected by gloss and texture of the surface. The standard refers to an ASTM standard concerning gloss of paint finishes and states that texture is still being investigated but that the American Standard for surface roughness may be helpful.

Note by Editor: The new standard on "Gray Finishes for Industrial Apparatus and Equipment" (Z55.1-1950) is available at 35 cents a copy from American Standards Association, 70 E. 45th St., New York 17, N.Y. Four color chips are available for $2.25. When the chips and the standard are purchased together the price is $2.50.

New Synthetic Finishes From Styrene

By H. H. Miller

NEW RESINS and oils synthesized from styrene are giving paint formulators new tools with which to develop some excellent industrial finishes.

Every manufacturer who paints or finishes his products should investigate the merits of these unique products. With these synthetics it is possible to combine many desirable qualities in one finish.

To those who seek fast drying, the materials obtained from styrene offer enamels that air-dry with the speed of nitrocellulose lacquers. If a baking finish is desired, they offer a baking schedule faster than any straight alkyd—from 5 to 15 minutes at a heat of from 300° to 200° F. In many cases, their extreme air-drying speed may eliminate the necessity of baking altogether.

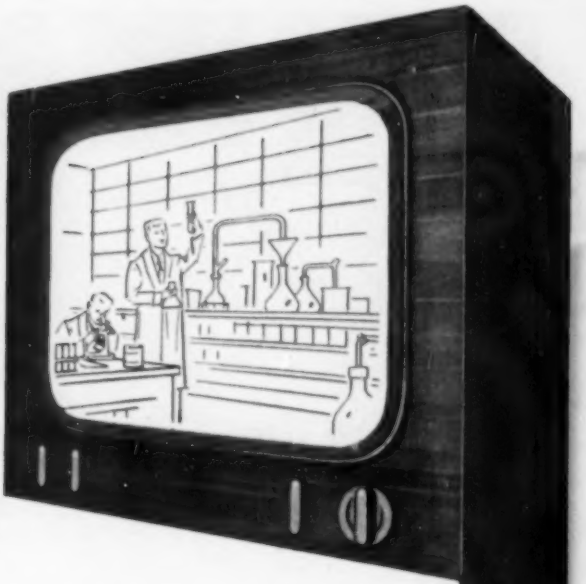
To those who seek reduced costs through the use of fewer coats, they offer a full enamel finish in one coat. To those who fabricate their finished products from various raw materials, the styrene synthetics offer finishes that work equally well on paper or steel. They are used on all kinds of products, from toys to parking meters, from furniture to farm implements. Where performance is paramount, they offer excellent resistance to alkali, acid and water. In durability they compare to the best alkyds.

In versatility styrene synthetics have few peers, as they are equally well-suited to enamels or primers; high gloss or dull finishes; air-drying or baking schedules. Besides these conventional finishes, they are widely used in novelty finishes such as the familiar hammered effect, or the newer inverted hammer-effect finishes. These latter finishes are extremely useful, as they confer an unusual masking effect upon imperfect surfaces over which they are used. In this respect they act in a manner similar to wrinkle finishes, but have . . . a smooth surface . . .

Styrene synthetics are being made by a number of manufacturers. They range from styrene treated oils to styrenated alkyd resins. This wide range offers a selection from which most finishing materials can be made.

Finally, the manufacturer who uses paint on his products will be pleased to learn that all of the merits mentioned here can be obtained at reasonable costs. The styrene alkyds are not higher priced than other commonly used synthetic resins and, with the practically unlimited production capacity for styrene in the United States, the supply should be adequate in almost any emergency.

AS MODERN AS TELEVISION



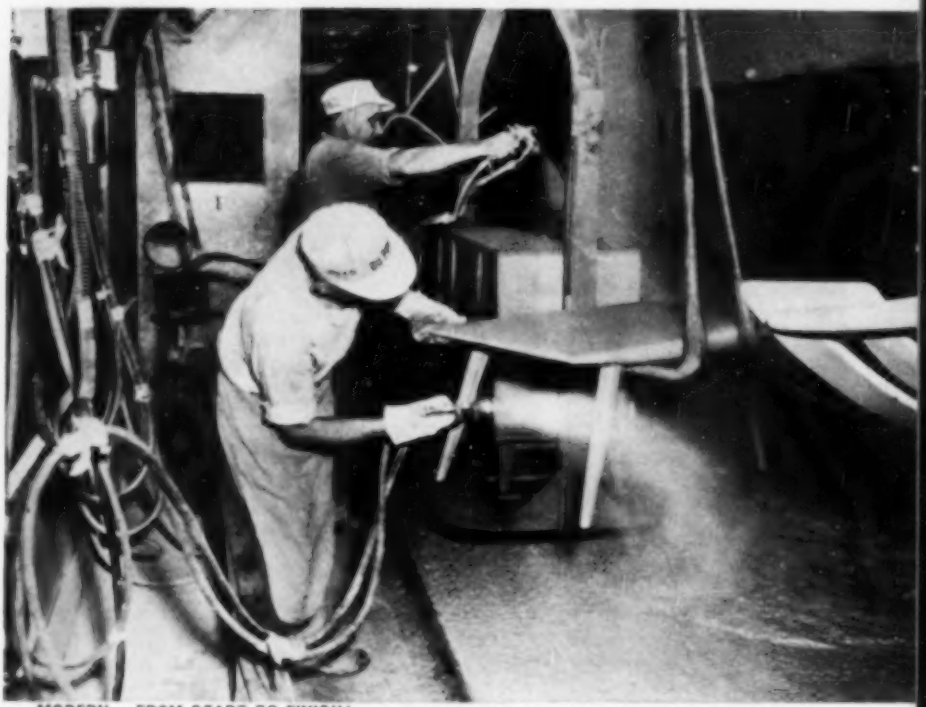
Gilbert Spruance finishes are kept as modern as television itself — through constant researching, testing and experimentation—in our modern, fully equipped laboratory.

If you have a television set the chances are that the cabinet was finished with Gilbert Spruance stains — fillers — undercoats and lacquers noted for quality, beauty and durability.

If there's a wood finish you wish you had — dreamed about — or just imagined — if there's one you want improved — changed or developed — we invite you to avail yourself of our experience and willingness to work on it for you.

THE GILBERT SPRUANCE COMPANY

PHILADELPHIA 34, PA. • WINSTON-SALEM, N. C.



MODERN—FROM START TO FINISH! Du Pont DULUX helps furniture manufacturers make the most of up-to-date production-line methods. With DULUX, this two-man spray booth can coat over 1,000 pieces of furniture in a normal eight-hour day.

GLAMOUR FOR A WORKHORSE! It takes a rugged finish to ride the rails year after year. That's why 85% of America's leading railways use DUCO lacquer and DULUX enamel on their locomotives, passenger coaches, etc. These sturdy Du Pont finishes keep their gloss and color despite exposure to smoke, fumes, cinders, hard knocks and weathering.

MAN-MADE SANDSTORMS MAKE PAINT TELL ALL! That's how Du Pont paint chemists determine the ability of a new finish to take abrasion and wear. Finished test panels are exposed to a continuous blast of finely ground carborundum. The time it takes for the gritty blast to eat through the paint film measures the resistance of the new formula.

A BIG FUTURE FOR FURNITURE IN A MATTER OF SECONDS

DULUX for Furniture—typical of the 12,000 Du Pont finish formulas working for industry today

• When furniture manufacturers first heard about DULUX for Furniture, it sounded almost too good to be true. This new top-quality Du Pont finish made it possible for many manufacturers to cut top-coat costs by 30%, application time by 50%.

Today, the rich glowing sheen of Du Pont DULUX protects and beautifies millions of pieces of furniture at low cost. Moreover, the fact that one spray coat does the job of multiple coats of lower-solids finishes has made DULUX a vital factor in modern conveyorized finishing methods.

The development of DULUX for Furniture is one more example of the way Du Pont paint chemists work with and for industry. Their constant aim: *new* finishes that cut production costs . . . *new* finishes that make products look better, sell better, last longer.

For expert assistance on *your* finishing problems, contact the Du Pont Finishes sales technician in your area . . . or write E. I. du Pont de Nemours & Co. (Inc.), Finishes Div., Wilmington 98, Delaware.

STILL THE LEADER FOR SALES APPEAL!

Twenty-five years ago, Du Pont DUCO proved a lifesaver for the infant auto industry. It cut drying time from days to hours. It gave metal surfaces a lustrous new look of beauty. Today, DUCO remains the unchallenged leader . . . improved many times and still unsurpassed for good looks, durability and sales appeal.

DEPEND ON DU PONT FOR BETTER FINISHES

INDUSTRIAL PAINTS • LACQUERS • ENAMELS VARNISHES • THINNERS • STAINS • AND SPECIAL-PURPOSE FINISHES FOR AIRPLANES AUTOMOBILES • FURNITURE • HOME APPLIANCES • MARINE EQUIPMENT • RAILROAD EQUIPMENT • REFRIGERATORS • SIGNS TRACTORS • FARM EQUIPMENT • MAGNET WIRE • VEGETABLE CANS • OFFICE EQUIPMENT

DUCO AND DULUX ARE REG. U. S. PAT. OFF.

DU PONT

REG. U.S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

Electric Burn-off Oven Cleans Metal Stampings

By J. I. KOLB
Application Engineer
*Edwin L. Wiegand Co.**

STAMPED SHEET metal parts for floor furnaces are automatically cleaned in less than one minute in a new setup now operating at the Lawson Mfg. Co. plant in Pittsburgh, Pa. The sheet metal parts measure 31x20-in. and are shaped as shown in the illustration on the opposite page.

They are carried by overhead chain conveyor through an infra-red oven that removes all traces of oil in 36 seconds. The oven consists of two banks of nine vertically mounted 3.6-kw. radiant heaters. These two banks of heaters face each other and the sheet metal parts which hang from an overhead conveyor pass between them. At the base of each bank of nine vertical heaters a single heater is mounted horizontally, with its face tilted upward to an angle of 45° to direct added heat to the bottom edges of products that move through the oven by conveyor. The total installed capacity is 72-kw. The heated section of the oven is about 3-ft. long and the conveyor moves at the rate of 5-ft. per minute.

Oven Heat of 400° F. Vaporizes Oil Coating

During the 36 seconds that elapse while parts are moving along between the heater banks, their temperature rises to 400° F. which completely vaporizes the oil coating. (This oil coating was a rust proofer during storage and a forming lubricant during the forming and stamping operations.) Parts going through the oven are automatically heat-cleaned at the rate of 160 per hour. The cost of electrical energy is about one cent each (per part going through) based on the plant's prevailing power rate. An economy factor is the oven's 2-minute heat-up time which permits the use of heat only as it is needed.

While there is probably some foreign material (shop dirt and smudges) in addition to the oil or grease on the sheet metal parts, nevertheless all surface contamination is completely removed as the parts travel through the infra-red oven.

The metal surface looks visibly clean. However, upon rubbing something across the metal, it does show evidence of a very slight carbon or smudge deposit. In this particular application, no further wiping of the surface is performed—although a quick wipe-off could be given if this were required. After the two

Opposite page: Stamped sheet metal parts are attached to the conveyor for a 36-second trip through the infra-red oven.

*Electrical heating engineers and manufacturers of Chromalox heating units.

halves of each set are spot-welded together, they are spray painted with aluminum paint. The very slight smudge deposit does not interfere in any way with the painting and no evidence of it shows up in the final product. No trouble has occurred due to lack of adhesion.

Oven Insulation; Clean Reflectors

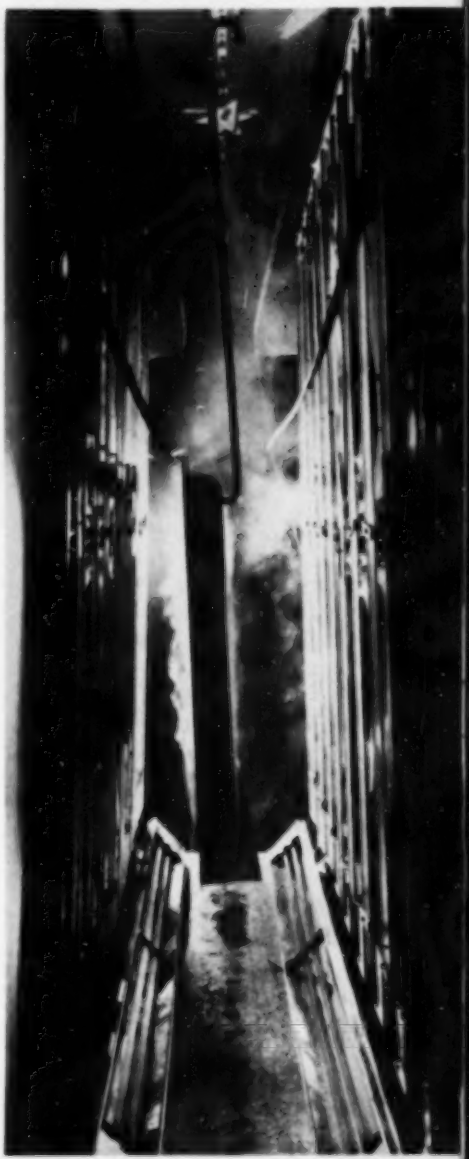
The oven's efficiency was increased by insulating the space behind the heaters with glass wool. Overhead a hood was installed and a low volume fan removes any exhaust fumes from the building.

I have been asked several pointed questions about the reflectors. The radiant heaters are provided with reflectors made of Alzak aluminum. So far the reflectors have not required any cleaning. They are still bright after one month of operation. One thing that might account for this is the fact that the back of the oven is completely closed and insulated. This means that the surface of the reflector will tend to operate 25° to 50° hotter than the air in the oven.

Perhaps after a longer period of operation, probably in terms of months, the reflectors may need to be cleaned. This can be done with any of the common cleaning agents, since the Alzak reflector is a good durable and hard finish.

So far, there has been no special effort to keep the surrounding air free from dust and dirt. The closed bottom of the heaters is above the floor approximately one foot, so that the draft does not pick up any dirt from the floor. *(Cont'd on page 74)*

Surface grease vaporizes before the intense heat made by infra-red heaters on each side. The pressed metal parts hang from long hooks attached to the overhead conveyor.



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Highest Quality

INDUSTRIAL LACQUERS & ENAMELS

Have you a finishing problem? We'll be glad to help solve it

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Emerging from the oven, the metal parts proceed by conveyor to the next operation which is spot welding the two halves of each set together to form a complete unit.

No provision was made for any accelerated cooling of the work, since there is sufficient space between the oven and the next operation to permit the parts to become cool enough to handle.

Gray Spots in Lacquer Finished Cabinets

By H. H. Connelly

WHEN trouble develops in finishing operations, the first thing to look for is what's causing it; without this information any attempted remedy may result in making bad matters worse. Sometimes the real cause is difficult to locate, and a gradual process of deduction is necessary to uncover the culprit.

At times a good finishing man must practically convert himself into a Sherlock Holmes. He must study every clue—with a magnifying glass if necessary—and finally, by a process of elimination, weed out all the possible causes of trouble until the real cause is uncovered.

The idea of a magnifying glass may seem absurd to some but only recently it proved its worth to a manufacturer of cabinets being finished with lacquer.

Minute gray blotches were showing up on panels coming from the finishing conveyor. To the naked eye they had all the appearance of gray spots. Under the magnifying glass each "spot" took an the appearance of a mass of white dots resembling pin heads.

Were they forming on the sealer coat or the lacquer coat? Scraping away the top coat did not remove them, and the time of formation was placed at the sealing operation. White specks could be easily formed by excess moisture in the sealer. The peculiar location of the defects placed the time at the beginning of the spray stroke and they showed up only on the first few pieces.

The conclusion finally reached was that during periods of standing idle, the spray gun and compressed air had collected a small amount of moisture, especially during the current period of damp weather. Careful blowing of air from hose and gun before spraying corrected the trouble.

Auto Body Engineers to Hold Convention in Detroit

The American Society of Body Engineers have formulated plans for the Fifth Annual Technical Convention to be held at the Rackham Memorial Building, 100 Farnsworth Ave., Detroit, 2, Mich., on Wednesday, Thursday and Friday November 1st, 2nd and 3rd.

There will be eight technical sessions in the Engineer Society of Detroit Auditorium directed by outstanding speakers and engineers in the Automotive Industry, who will bring the latest developments and trends in the Auto Body Styling, Materials and Production Engineering.

An exceptional display is being arranged by leading suppliers and parts manufacturers in the Automotive Industry. They will show their newest products and the methods used in developing them. The diversification of ideas and materials in the various manufacturers' booths should prove most interesting and educational to laymen and engineers alike.

Lowering the Cost of Chromic Acid Treatments

Possible cost saving in chromic acid anodizing, as well as other metal treatments such as copper stripping, brass pickling, magnesium dips and chromium plating, are indicated through the use of oxidation-resistant cationic exchange resins. In a preliminary investigation by Mutual Chemical Co. of America, 270 Madison Ave., New York 16, N. Y., certain commercial resins have been found which are stable in the presence of chromic acid, and can be used for removing dissolved metals, with recovery of the chromic acid for re-use. An added advantage is in minimizing the potential problem of waste disposal.

This *INFRA-RED* system SAVES 300% in Baking Time and Space!

Fostoria Pressed Steel Corporation installation at the White Motor Co., Cleveland.

This ceiling-suspended, twin tunnel at the White Motors plant highlights again the many advantages of finishing products with infra-red baking. For example:

1. Baking is done in 5 minutes – as against 20 with other systems.
2. Only a 75-foot *overhead* space was used – saving valuable floor area and permitting compact, continuous conveyance of work.
3. The installation is expected to result in savings of materials and in operational efficiencies.
4. Quality control is easier.
5. Only reasonable maintenance required.

Why not learn what an infra-red baking system can do for *you*? Chances are you, too, will find it a *faster, more versatile* and *lower cost* oven.

CHECK UP ON LAMPS, TOO! Amplex offers the most complete line of industrial infra-red lamps. Also available is a complete new line of infra-red lamps with "Moisture-cote" protection. This protection means amazing resistance to breakage from paint drippings, splashing, condensation – yet the lamps cost little more than ordinary lamps!

Write Amplex Corporation, Dept. 55, 117 Water Street, Brooklyn 1, N.Y.

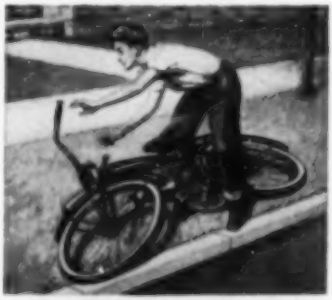
amplex

manufacturers of industrial lamps • vibration service lamps • shockproof lamps • sealed beam reflector lamps • reflector spotlights and flood lights • street lamps • traffic signal lamps.

The day drudgery went out of style!

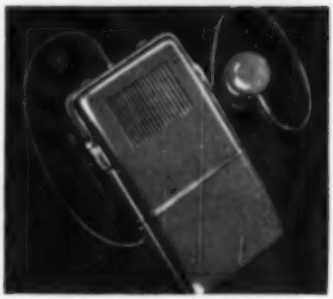
Problem: Housewives hated the drudgery and scrubbing needed to keep their home laundry clean. Manufacturers wanted easy-to-clean finish.

Solution: Industrial Finish Engineers put this drudgery out of style by developing a special finish for automatic laundry equipment and other appliances that can be cleaned quickly with damp cloth. This finish cuts down application and drying time. A cost-saver.



Problem: To find ways to decrease the unit cost of bicycles.

Solution: Industrial Finish Engineers developed a special finish that permits shorter baking time, cutting down production costs. This high-gloss finish has a permanently hard finish that is mar-resistant.



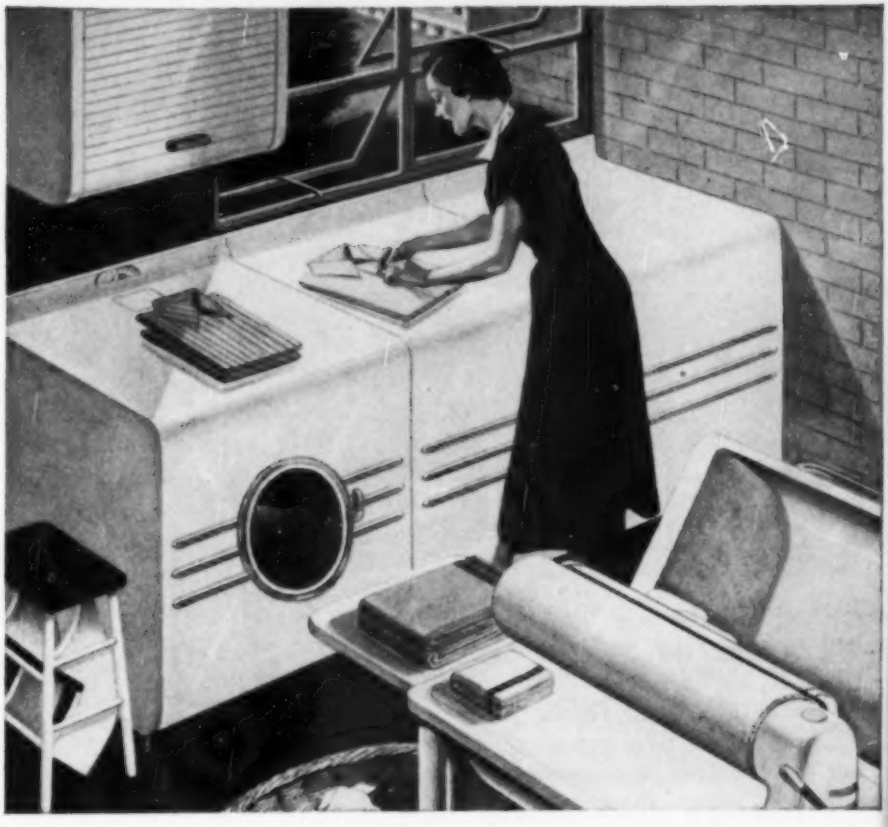
Problem: How to cut cost of wiring electronic devices.

Solution: Industrial Finish Engineers developed special metallic finish which is good conductor of electricity. This eliminates painstaking method of laying wires—saves production time—cuts costs.

Problem: To find an inexpensive way to give overshoes a gleaming surface.

Solution: Industrial Finish Engineers developed a special elastic, durable finish. This finish is baked on in the same operation that cures the rubber. Saves time. Saves money.

The better the



Save time—cut costs through Industrial Finish Engineering!

Cut your manufacturing costs! Lower your break-even point!

Industrial Finish Engineering has done this for many manufacturers. Learn what it can do for you. See an Industrial Finish Engineer.

For the Finish Industry has technical ability to make finishes to suit the specific requirements that you need for your products. Remember, most of your customers *start buying with the finish in mind!*

finish–The better the buy!

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GOOD FINISHES START HERE

The quality of the filler is all important in building a good finish. Reliance Fillers have proved they are trouble free, high-quality in finishing rooms throughout the country.

Reliance Fillers reduce easily with ordinary naphtha; do not settle hard; pad-in and wipe-off without stickiness; fill the pores flush; dry quickly; add fullness and plumpness to the top coats; do not bubble, puff or shrink; produce clear, non-gray, permanent colors. In short, they do all that is expected of the best filler.

We make many types of fillers . . . each best suited to a specific need. A survey of your filler requirements will permit us to prescribe the right filler to insure your getting a good finish.

For additional information address 4732 Crittenden Dr., Louisville, Ky.

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Finishing MAHOGANY CABINETS

By Irving Strasnick

THE FOLLOWING is a system used in finishing television cabinets for some of the leaders in the television field. If the operations outlined are carefully followed there should be no reason for finish failure. Of course, any finish depends a great deal on the human element, but as this system is broken up into separate and distinct operations, any good finishing foreman can, in a short time, train a group of willing men to ably handle their individual jobs. Another important factor is the materials used; it is poor economy to try to save by buying lower priced materials; after all, they are only a small part of the cost of your final finish.

Patching Defects; Final Sanding; Blowing Off Dust

Our first step consists of inspecting the cabinet as it comes from the assembly room. This is an important job, as your final finish depends, to a great extent, upon the care taken here. A skilled workman at this station patches or sands out all visible holes and defects. He must also see that the cabinet is sanded smooth and he usually passes over the tops and faces with No. 5/0 sandpaper.

Editor's Note: One experienced finishing foreman (call him Mr. X) to whom we referred this article, believes that all of the hole filling, patching and sanding in the white, should be done before the cabinets arrive in the finishing room. Then all that is needed is a complete "blowing off" with a compressed air gun before finishing operations begin. Probably most foreman finishers would prefer it this way, that is if the work could be done properly in the cabient room.

For filling holes there are several excellent patching compounds on the market. This non-shrink putty

is forced into the holes, deep dents and deep scratches; after the patch dries thoroughly it is sanded level with the surface of the wood. Shallow dents in the wood can often be raised by wetting them and applying a hot burning-in knife to the dent; this causes the wood fibers to swell to their original form. Our operator blows off all sanding dust with an air gun and passes the cabinet on to the next operation.

Staining; Washcoating; Filling; Wiping; Drying

Our next step is staining. We have tried several types of stains and stain fillers, but our best results have been obtained by using an NGR (non-grain-raising) stain which gives us depth of color without the objectionable grain raising feature of water stains. This type of stain, obtainable in any desired color from most finishing supply houses, is sprayed evenly over the cabinet, with gun strokes running parallel to the grain of the wood. It dries rapidly. In about 30 minutes the stained surfaces are washcoated with a 7%-solids solution of sealer, which is allowed to dry for about two hours.

Editor's Note: A wood finishing consultant, Mr. Y, who looked over this article, offers the following comment about wash coating:

"Personally, I do not recommend a washcoat unless it is absolutely necessary. While the solid content recommended here is not very high, it may tend to make the finish brittle, chalky and give poor adhesion.

"By using a non-bleeding NGR stain I feel that a washcoat is unnecessary; if used at all, I would much prefer using a very low-solids gloss lacquer than a sealer. This would improve the adhesion; a 'sanding quality' is not necessary here, since the only thing to be sanded off is dust particles.

"I suggest trying to apply the stain by wiping it on with a rag, or by brushing or dipping; see if this does not eliminate the need for a washcoat. I think, too, that it may give the necessary depth of color without the overall toning he is now using. While I agree with this method of toning out the light streaks, etc., I do not think it is necessary to go over the entire cabinet."

After a light sanding with No. 5/0 finishing sandpaper, the cabinet is filled, using a quick-drying mahogany filler which is compatible with the sealer and lacquer being used. This filler is mixed in the proportion of 12-lbs. of paste filler to a gallon of liquid composed of 75% mineral spirits and 25% VMP naphtha. After the filler has had time to set up, it is wiped off in a circular or across-the-grain direction with sea grass, fine excelsior or sisal, and then cleaned up with an open-mesh wiping rag. All corners and crevices are thoroughly cleaned with a stiff scrubbing brush and pointed stick. The filled cabinet is set aside to dry overnight.

Editor's Note: Foreman, Mr. X, believes that this filler mixture is too heavy. He prefers to use only 8 to 10-lbs. of filler paste to the gallon of liquad, "as anything over that amount is wasteful, not necessary, and is bound to be wiped off. Also, it has a tendency to hamper or slow up the wiping of filler". One man's opinion, of course. *(To p. 82)*

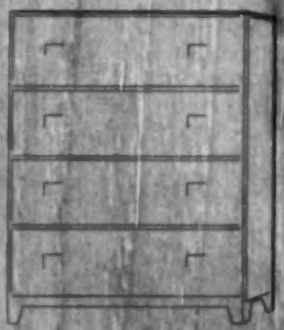
By actual test

For Color Retention

On Light Finishes . . . . It Is

CRYSTAL CLEAR
WATER WHITE
LACQUER

• It's a new, time-tested material for preserving the original color of those beautiful grays, off whites, lime, pearl, ermine and all pale, bleached and decorative effects so popular on furniture of today.



THE
SCHAEFER VARNISH
COMPANY
Incorporated

15th and Magnolia
LOUISVILLE 10, KENTUCKY

Sealer Coat; Lacquer Toner; Shading Stain

Next morning, the cabinets are ready for the spray man; he sprays on a full-bodied coat of 21% solids sanding sealer. This coat is allowed to dry for two to three hours, after which the surface is sanded smooth. Then we apply a light coat of lacquer toner to the entire case and shade all light parts to match the overall color, using a shading stain in a small touch-up gun.

The toner is made by mixing two parts of lacquer to one part of lacquer thinner and adding enough concentrated color to give it a light color, about half the strength of the NGR stain.

The shading stain consists of one part lacquer to three parts thinner, with the addition of enough concentrated colors to make it slightly darker and on the same general shade as the cabinet after it has been toned. This concentrated color can be obtained from any supplier of NGR stains, as it is used in the formulation of the stains.

Lacquer Coats; Inspection; Use of Stick Shellac

Inasmuch as the last coats were very thin and the time consumed in shading has allowed time for the toner to dry, our spray man can proceed to apply his first full-bodied coat of 27%-solids clear lacquer without removing the cabinet from his booth.

Ordinarily, as our sealer and toning operations and first coat of lacquer are applied in the early part of the day, we allow them to dry until near the end of the working day, at which time we give the cabinet its second full-bodied coat of lacquer—trying, as on every lacquer coat, to flow it on as smoothly as possible. Next morning the cabinets are inspected again, at which time all dents and holes, which were either missed on the first inspection or caused by handling, are filled by burning in with transparent stick shellac. We use stick shellac rather than stick lacquer because shellac has less tendency to swell under the next lacquer coat, which is the final one and which is allowed to dry overnight. After the burn-in patching, these patches must be smoothed down level with adjoining surfaces.

Editor's Note: Referring to the foregoing paragraphs, Mr. X says: "With reference to the lacquers used, he calls for a pretty high-solids content. Applied over a 21% sealer, this finish may produce a hard but brittle film which, when thoroughly dry, will chalk white when marked or scratched, and if subjected to extreme temperature changes it is apt to flake or peel. I have had trouble with this type of finish cold checking.

"Regarding the use of stick shellac instead of stick lacquer, some finishers of furniture and radio cabinets prefer stick lacquer and get good results with it. This may be just a case of personal preference, of course."

Wet Sanding; Rubbing; Polishing; Final Touch-up

Our next operation is wet sanding and rubbing. The cabinet is first wet sanded, using No. 320 wet-or-dry sandpaper, lubricated with

NEW PERIOD
Production Finishes
BAKING ENAMELS
LACQUERS SHELLAC
ENAMELS FILLERS
SEALERS SUPPLIES
PRIMERS STAINS
SYNTHETICS VARNISHES
UP UP UP
Goes Quality
DOWN
Come Costs
WITH
NEW PERIOD PRODUCTION FINISHES
• Fillers and Stains
• Lacquers—Clear and Semi-Gloss
• Sealers
• Lacquer Enamels—Flat and Gloss
• Synthetic Enamels
Learn why more and more manufacturers are turning to New Period Finishes. Send for 5 gallon working sample at drum price.
MANUFACTURERS OF FINE WOOD AND METAL PRODUCTION FINISHES
NEW PERIOD
Production Finishes
NEW YORK WOODFINISHERS' Supply Co.
109 ITALY STREET BROOKLYN, N. Y.

either water, mineral spirits, or as we prefer, a wax-base rubbing lubricant. Flat surfaces are usually sanded with an air-powered rubbing machine; and curved surfaces are sanded by hand. Tops, fronts and doors are then hand sanded with No. 400 wet-or-dry sandpaper, using the same lubricant. This removes any sandpaper scratches that may have been caused by the courser sandpaper and the machine.

After cleaning off all lubricant and sandpaper scum, the cabinet is rubbed with compound, the workman using a pad made of either fine burlap or cheesecloth. The purpose of this "compounding" is to remove all remaining traces of fine sandpaper scratches and to bring the finish up to a high luster. For a duller rubbed finish, fine pumice stone and paraffine rubbing oil are used instead of rubbing compound.

Editor's Note: Mr. Y, the consultant, comments on the rubbing as follows: "His rubbing procedure is excellent with the exception of the final polishing, where he recommends a non-greasy polish; I believe you will get better results with a polishing wax, like 'Simonize' or its equivalent. A thin application, buffed with a sheepskin or woolen pad, will produce a high luster. This polishing wax will also prevent moisture from penetrating the finished surface.

"You will find that by using a No. 4/0 steelwool instead of No. 400 wet-or-dry sandpaper with the same lubricant, you will get practically the same results—and in much less time. I do not say that my way is better, but it is faster."

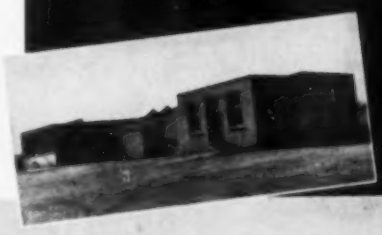
The final operation consists of polishing and touching up all worn edges and burning in any dents caused by careless handling. At this time stick lacquer should be used because, when smoothed off, it more closely resembles the rubbed finish. The edge touchup should be close to the color of the cabinet and can be compounded of a thin shellac mixture with a little dry color and alcohol-soluble stain powders added to make the desired shade. Your polish—and there are many good ones on the market—should be one that does not show finger marks and is not greasy.

In summarizing the above method, you will notice that the finishing time involved is four days. If your men are trained to do a neat thorough job, and if your materials are of high quality and suitable for this work, the resulting finish will be one you can feel proud of, and your costs will be about as low as possible with this type of finish.

MANY FORECASTERS tell us that this will be a good business year—but not an easy one. None are too easy. No year will be especially good for those who do little but grumble and wait. To make a successful business year requires alertness, courage, faith, sound judgment, a certain amount of conservatism, a lot of detail work, intelligent advertising, aggressive sales efforts and more efficient production. If you are up on all of these things, nearly every year will be a profitable one for you. At any rate, the momentum of your progress will carry you much farther and you will fare much better than others in any so-called "off years". Some concerns do an excellent business in "off years."

Since its inception, Wolverine has specialized only in high quality finishes for wood and metal. Leading manufacturers now testify to the uniform, high quality of its materials, and to the dependable and prompt service which Wolverine renders at all times. Inquiries are invited.

Specializing in **HIGH QUALITY** *Furniture and Metal* **FINISHES**



Wolverine Finishes
CORPORATION
836-50 Chicago Dr., S.W., Grand Rapids 9, Mich.

QUALITY!

". . . and best of all we have improved the quality of our product."

Those words written in praise of the DE BURGH FINISHING SYSTEM have been repeated often in letters from a rapidly growing list of enthusiastic users.

Many, in praising labor and space saving features, have expressed their pleasure in improved quality of finish without change of formula or materials.

"Quality" is a word well applied to the DE BURGH FINISHING SYSTEM.

Designed by a FURNITURE MAN for FURNITURE MEN it is the "Quality" product at lowest cost that will save the most money and give best efficiency in your finishing room.

Prove this to yourself — NOW!

Investigate!

DeBurgh Conveyors

Patented and Patents Pending

For Assembly, Finishing and Upholstery

1741 K St., N. W., Washington 6, D. C.

Stirring

An attention-arousing finish on your product better reflects its inherent qualities . . . gives it individuality and sales appeal.

If you feel the coating you are presently using doesn't do just that . . . let our Creative Studio show you how it is possible to make your merchandise more eye-catching than ever.

Our staff will approach your problem with a clear, definite purpose in mind . . . create an appealing finish that fills specific needs. Reputable firms are invited to take advantage of our service at no cost or obligation. May we hear from you?

No Tampering with Quality

ROCKFORD VARNISH *Company*

ROCKFORD, ILLINOIS

Manufacturers of Protective and Decorative Coatings

Tumble Finishing

We are interested in finishing by the tumbling method. Do you have any of your old issues that carry an article on tumble finishing of wooden parts?—I. M. PLASTICS.

We are sending you a reprint of an article on this subpect which appeared in Nov. 1949 issue of I.F.—ED.

Air-Dry Wrinkle Finish

We are interested in an air-dry wrinkle-finish paint. Do you have any information?—J. PATTERN WORKS.

The air-drying wrinkle is not as hard or as durable as a baked wrinkle enamel finish and, we believe, few companies offer it. In a letter we are submitting names and addresses of three concerns who have advised us they can supply such a material.—ED.

Brilliant Metallic Silver

In March 1950 issue, on page 102, an inquiry from "G. A. Co.", has our attention. Is it possible that this company could make use of, or were referring to the silver reduction method of applying a brilliant metallic silver filament on wood molding? We have been doing considerable experimental work and have successfully covered molding in length, and also completed frames, involving wood and composition material.

From our experimental work, we are convinced that a comparatively economical and mostly mechanized method could be set up to apply this brilliant filament of silver—that is, provided there is sufficient volume to justify the installation.

If you are interested in seeing samples of this type of finish, we would be pleased to forward some of our results.—JOHN WALTER & SONS LTD. ("Durwood" Novelties and Souvenirs), Canada.

Vapor Degreaser Wanted

We are interested in cleaning our material (metal doors, hardware specialties) by vapor degreasing and we would be pleased to receive manufacturers' names and literature.—W. MFG. CO.

Names and addresses furnished.

Porcelain Enameling

From your excellent source of information, could you advise us where we might obtain information on Porcelain Enameling; also, where we might buy the materials and supplies for this process?—B. D. CO.

We suggest Ferro Enamel Corp., 4155 E. 56th St., Cleveland 5, Ohio.

Reproducing Wood Grain

One of our customers desires information on the so-called Dynoc transfer method of reproducing wood grain. Could you also advise us who

STAINS • GLAZES

- LACQUERS
- SEALERS
- FILLERS
- ENAMELS
- UNDERCOATS
- SHELLAC
- SPECIALTY FINISHES

FOR APPLICATION BY ALL METHODS

•

Industrial Finishes in Step with the Times

Stains and Glazes to produce all modern or traditional colors with rare attractiveness. Specially formulated to give easy application with quick, dependable drying.

JAMES B. DAY & CO.

CHICAGO 14

makes the engraved plates and rollers for this type of application to wood?—C. W. Co.

You probably mean the Di-Noc method of grain reproduction offered by The Di-Noc Mfg. Co., 1700 London Road, Cleveland 12, Ohio.

Engraved copper plates and equipment for grain reproduction have been advertised in every issue of INDUSTRIAL FINISHING for the past year or more, see ¼-page advertisements.—ED.

Detects Glue Spots

Some time ago our finishing foreman read an article in INDUSTRIAL FINISHING, on how to detect glue spots on cabinets just before the cabinets are to be finished. There was a chemical used on the cabinets to bring out glue spots so they could be sanded off. We would like to find this article.—V. A. Furn. Co.

The article appeared in October 1947 issue. During the following months (November and December 1947), Grand Rapids Varnish Corp., 1350 Steele Ave., S.W., Grand Rapids 2, Mich., advertised this product. Tear sheets of the article and ads are being sent to you.—ED.

Multiple Pad Sanding Machine for Panels

We manufacture decorative wall panels, and have read your article entitled, "Finishing Decorative Wall Panels", which appears in August 1949 issue, beginning on pages 26-27. In this article you mention a wet sanding machine as follows:

"In the first wet sanding machine, two sets of 15 sanding pads oscillate crosswise as the prime-coated Masonite panels are carried forward under them at a speed of 20-ft. per minute."

Where can such a sanding machine be bought? Will you assist us in locating a manufacturer of such a machine in the U.S.A.?

Have you published an article about the application of hammer-effect coatings? If so, may we have tear sheets of these articles?—PETERSON & Co., Copenhagen, Denmark.

We are not sure, but the only manufacturer of a large-stroke sanding machine we know of is Curtis Machine Corp., Jamestown, N.Y. We suggest that you write them.

In a letter we are sending tear sheets of some articles we have published about hammer-effect finishes.

Where's Our Client's Ad?

Our client, the A. O. Smith Corp., Meter Division, Los Angeles, Calif., advises us that they have a letter from a prospect, which asks for more information on their meters, "as described in advertisement in December issue of INDUSTRIAL FINISHING". Since we had no ad in this issue, we are wondering if there may have been a news item which we do not know about. Would you please send us a copy of the December issue?—O. K. FAGAN ADV'G. AGENCY.

In Dec. 1949 issue, copy of which is being sent to you, a news item on page 95, entitled, "Meters to Measure Flow of Finishing Material", gives the name and address of your client, in both Los Angeles and Chicago.—ED.

Recognizes Former Apprentice

In February 1950 issue of INDUSTRIAL FINISHING, you have an article on metal decorating. On page 55 is a picture of the Potter press used and the pressman operating same. This

NEW! SUNDSTRAND SINGLE PAD PNEUMATIC SANDER

For Straight Line Sanding of Wood-Metal or Composition

$85.00

This new, small and compact sander is light enough for women operators and can be used in small or confining areas. It has straight line pad reciprocation up to 3,000 oscillations per minute for greater sanding efficiency.

Counterbalanced Pad Movement Eliminates Vibration and minimizes operator fatigue. Machine can be guided practically without effort over the surfaces to be finished. The machine does the work, not the operator.

Check These 8 Features

1. Straight Line Pad Reciprocation — easy to produce smooth, level surfaces free of pressure marks.

2. Variable Pad Speed — governor control provides pad speed range from 1500 to 3000 oscillations per minute . . . permits use of ideal speed for operation on material being sanded.

3. Anti-Friction Slide Bearings—reduces friction and wear.

4. Built-in Water Attachment — controlled water supply for wet sanding.

5. Small and Compact — easily handled by women operators.

6. Palm Lever Control — air and water both controlled by one lever.

7. Counterbalanced Pad — eliminates fatiguing vibration.

8. Low Air Consumption — 5-1/2 to 10 C.F. per minute, depending on speed.

FREE DATA If your work includes sanding of wood, metal or composition on production or maintenance work, write for free bulletin. Ask for bulletin 1F-53.

SUNDSTRAND MACHINE TOOL CO.
PNEUMATIC MACHINE DIVISION
ROCKFORD, ILLINOIS, U.S.A.

young man is one who I started as an apprentice and taught the essentials of metal lithography. Naturally I was surprised and somewhat proud to see his picture in a nationally distributed magazine like INDUSTRIAL FINISHING.

The copy shown me was not available to keep. Could I buy a copy of your February issue of INDUSTRIAL FINISHING?—George Brown.

A copy of February issue is being sent to you.—ED.

Faucets for Drums

We have trouble keeping, in our thinner drums, faucets that will not leak. Who manufactures a faucet that will work with thinners and naphthas statisfactorily?—G. S. Co.

Only firm we think of at the moment is Morse Mfg. Co., Syracuse, N.Y. Will some readers write us and submit other names?—ED.

Adhesives for Flock

One of our clients in Italy is interested in buying adhesives to be used in coating paper and cloth in rolls, prior to spraying the paper or cloth with flock. The client has given us the following information and specifications:

1) The foundation cloth used at present is undyed cotton. They state that it would be desirable if the cloth could also be rayon (viz. of the same nature of the flock) which, however, is not being employed, as all adhesives used up to now filter through it.

2) The adhesives required should have the following characteristics:

A) Be possibly transparent, or obtainable in different colors.

B) Be suitable for both cotton and rayon cloths through which they must not filter; also for paper.

C) They must permit the washing of the coated cloths.

We would appreciate receiving, as soon as possible, the names of suitable suppliers of this material.—F. L.

In a letter we are naming several concerns who, we believe, can supply adhesives for your client.—ED.

Solvent Recovery Plants

We note, in your March 1950 issue (page 96), that there are solvent reclaiming plants everywhere. We have been unable to locate one in the Boston area and will appreciate your advice as to one in this vicinity.—C. Mfg. Co.

Nearest one we know of is Solvents Recovery Service, 101 Central Ave., Westfield, N.J. Perhaps some reader will tell us of one in or near Boston.

Luminescent Paints

We have read your recent articles on Luminescent Paints. Would appreciate your advising names of manufacturers of these paints, as we may be able to use some of these on our products. — T. R. Co. (Toys and Games).

We are interested in locating a source of supply for luminescent paint, such as is used on watch dials, etc.—H. Co.

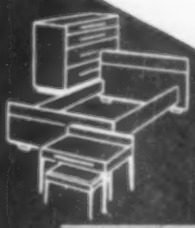
Information supplied.—ED.

We Supply Flow Meters

In March 1950 issue, on page 90, we noticed an inquiry entitled, "Flow Meter Wanted". Our flow meters

DURO-COTE AIR DRY ENAMEL

GIVES YOU SUPERIOR COLOR RETENTION AND HIGH BUILD!



The history of DURO-COTE is filled with successes where other enamels have failed. Exceptionally tough — high in surface resistance — DURO-COTE is giving manufacturers of kitchen cabinets, refrigerators, furniture, fixtures — yes, and toilet seats, all they've hoped for in durability and colorful sales appeal.

No matter what may be YOUR PRODUCT — if conditions require Air Dry Enamel — investigate DURO-COTE. The chances are DURO-COTE is what YOUR PRODUCT NEEDS!

DURO-COTE can be formulated for severest outdoor exposure.

Available in White and ANY COLOR in gloss, semi-gloss, or satin sheen. *Write for Your Sample Panel and Detailed Information.*

SYN-POR DURO FINISH

O'NEIL DURO COMPANY

MILWAUKEE 7, WISCONSIN

Manufacturers of Enamels and Lacquers for over 50 years

might be particularly suitable for his purpose. Would you give us the full name and address of inquirer?—FISCHER & PORTER CO. (Flowrator instruments for flow rate measurement and automatic flow control.) Hatboro, Penna.

Name and address supplied.—ED.

Phosphorescent Paints Can Be Silk-Screened

We would like to correct a statement that we believe was inadvertently made by P. C. Bardin in answering the question of the W. C. Co., on page 98 of March 1950 issue of this magazine.

Mr. Bardin comments that phosphorescent paints are too coarse for silk-screen application, and require hand application. I am sure this was not the intent of Mr. Bardin, as in his article on luminescent paints in January 1950 issue of INDUSTRIAL FINISHING, he refers specifically to the application of phosphorescent paints by the silk screen process on pages 46 and 48.

We have a number of customers who apply phosphorescent paints by the silk screen process. This process presents no particular problems in the use of phosphorescent paints, aside from selection of the proper screen mesh.—THE NEW JERSEY ZINC CO.

Make Paint Stick to Galvanized Iron

We read an inquiry under the above title, from "B. Sign Co." (Page 80, April), in which they ask for a solution to their problem of stopping paint from peeling off galvanized iron. We would appreciate an opportunity of contacting this account. Our 3 PV line of metal primer is tailor-made to overcome their problem.—EGYPTIAN LACQUER MFG. CO.

Name and address supplied by letter.—ED.

"No-Bake" Mixed With Gold

In January issue, on page 4, you mention a new compound that can be mixed with gold or silver powder and can be applied on glass, and which will air-dry and still have good wear and washing resistance. We are interested in this new compound and would like to get the name of the manufacturer.—Croname, Inc.

. . . . Will you be kind enough to supply us the name of the maker of this product?—R. E. Lamp Co.

The writer of the paragraph tagged it "American Crayon Co., Sandusky, Ohio."—ED.

Sealer, Stain Combined

We are interested in obtaining sources of supply for a sealer and stain combined. This is to be used on Ponderosa pine, maple and gum to obtain a walnut or mahogany finish. —C. J. (Custom Finishing).

We believe the materials you desire can be furnished by either of two large companies right in your city. In a letter we are naming them and several others elsewhere.—ED.

Clean Up, Paint Up, Fix Up

The April 1950 issue of INDUSTRIAL FINISHING has just reached my desk. Many thanks for the fine coverage given Clean Up, Paint Up, Fix Up, on pages 116 and 118. The tie-up of this program with contented cows is

Thanks to Flock Surfacing

BOTH SIDES

this Car Window Clothes Bracket* won't Scratch or Slip!

Inexpensive sprayed-on surfacing of Flock does away with the need for vacuum cups, rubber shields or any other type of cost-adding attachments. Bracket slips over top of car window glass—holds snugly and smoothly—won't mar, slide or scratch. Here the use of flock surfacing did much in giving the product immediate market acceptance!

Use
CLAREMONT *Flock*
—Its Finishing Values Start New Uses for Metals!

If your hesitancy to use metal for an application is due to its scratching tendency—study the possibilities of spraying the surface with a cushion of Claremont Flock. It forms a permanent topping, eliminates the need of felt backing or costly laminations.

INQUIRIES INVITED

• Claremont Flock is available in bulk, in colors, in quantity for special spraying-on finishing purposes. Write for samples, color charts, prices.

*Flock processing by Suedo Finishing Company, New York City

CLAREMONT WASTE MFG. CO.
CLAREMONT, NEW HAMPSHIRE

a new and interesting one. I am sure that your readers will greatly benefit from the program and, of course, when the readers benefit, so does the publication. — RICHARD G. THOMAS, Director, National Clean Up, Paint Up, Fix Up Bureau.

Wide Stripe Rollers

Will you please let us have the names of manufacturers of paint rollers, such as are used to apply 5-in. stripes on painted surfaces? We manufacture aluminum awnings and want to use this method to apply the color stripe on the awning.—W.L.R. Co.

Try Vogt Roller Co., 222 S. 12th St., Louisville, Ky., or Goshen Rubber Co., Goshen, Ind.—ED.

Electrostatic Spraying

Mr. Larson, of your New York office, thought you might be able to help us with tear sheets of the article on Electrostatic Spraying, which appeared in INDUSTRIAL FINISHING, August 1947. If you still have a copy of this article or the entire issue for August 1947, we would like to get it.—L. & G. Co.

Tear sheets of article sent.—ED.

Fireproofing Chemical or Paint

We wish you would advise us of some firms who could supply either a fireproofing chemical or a fireproofing paint for treating hardwood lumber for use in foundry bottom boards and flasks. We prefer a chemical.—P. FOUNDRY & MACH. WKS.

In a letter we are naming several firms which we believe can supply what you want.—ED.

Frederic Rahr Color Count

We recently heard about a color chart made up by Frederic H. Rahr. It is called the "Rahr Color Count". We would like to find out more about the Rahr Color Count, to see whether we could use this service for the benefit of our customers.—H. A. Co.

Frederick H. Rahr, Inc., is now at 9 East 56th Street, New York 13, New York, according to information supplied by Mr. Harold Zander of E. Leitz, Inc., New York 13, N.Y.—ED.

Shot-Blasting Equipment

We need information about shot-blasting equipment. It is our intention to install a plant of this type, mainly for preparing ironwork for painting.

Will you give us a list of the leading manufacturers of suitable shot-blasting equipment, from whom we may obtain technical data?

May we take this opportunity of saying how much we value the information and advice brought to us regularly by your publication.—TELEPHONE & ELECTRICAL INDUSTRIES PTY. LTD., N.S.W., Australia.

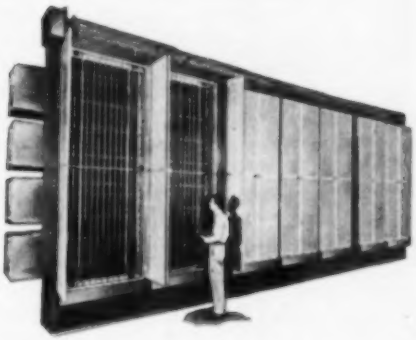
In a letter we are naming three sources of supply in the U.S.A.—ED.

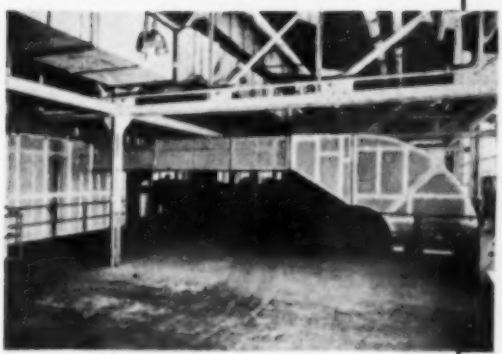
Duponol Powder Wanted

We are looking for a source of Duponol Powder which is used in water for rubbing out furniture.—F. MFG. CORP.

We believe the "Duponol" powder you mention is a product of E. I. du-Pont de Nemours & Co., Organic Chemicals Dept., Wilmington 98, Dela.

SUPER-CLEAN AIR contributes to *Pliofilm's** sales appeal





AAF Electro-Matic Precipitators guard product's Crystal-Clean Transparency during processing

FOOD products packaged in Pliofilm, made by Goodyear, are protected against air, moisture and liquids. What's more, their natural goodness is on display continually before the buyer because of Pliofilm's crystal-clear transparency.

Dust and dirt could easily mar such transparency if permitted to reach this material in the early stages of production. That's why all air supplied for the casting operation is delivered through ducts, as shown at left, after being thoroughly cleaned by AAF filters. Electro-Matic† Electronic Precipitators, similar to the units shown above, were selected because of the high degree of cleaning efficiency demanded.

Clean air has been the means of improving product quality, cutting rejects and reducing plant maintenance for many companies. But needs vary by product and industry. That's why AAF offers a complete line of filters ranging from electronic types to the simple throwaway unit. Regardless of your requirements, AAF has both the products and the engineering experience that insure the selection of the right filter for your job.

If you are interested in how clean air can cut costs in your operation, call your local AAF representative. He's the only man with a complete line of filters who can give you an unbiased answer.

AMERICAN AIR FILTER COMPANY, INC.
210 Central Avenue, Louisville 8, Ky.
In Canada: Darling Bros., Ltd., Montreal P.Q.

**Trade-mark of The Goodyear Tire & Rubber Co., Inc.*

†Automatic electronic precipitator.

AAF

AIR FILTERS
AND ELECTRONIC PRECIPITATORS

To Stir Paint in Big Tank

We read INDUSTRIAL FINISHING magazine and have endeavored to find, in the published advertisements, some manufacturer who makes an agitator that can be kept running more or less constantly in our paint dip tanks for the purpose of keeping the pigment, in our oil paints and the heavy residues of our asphalt paints, in suspension. This would assure a better covered finished product, as well as saving and using materials which now settle to the bottom of the tanks and eventually are removed as refuse.

We have two tanks, 4½-ft. wide, 10-ft. long and 2-ft. deep. They are usually kept filled to a depth of 15-in. At this depth each tank contains 425 gallons of material. From these facts you can see that we can use a protected horizontal agitator which we would want to keep in operation while we are dipping materials. We want, if possible, to eliminate the human element factor of not regularly stirring the paint. Any service you can render us will be appreciated.—N.S.Co.

There are two approaches to this problem. First, you might consider a propeller-type mixer mounted at one end of the tank—placed in such a position that it will not interfer with dipping of parts. The propeller blades should be of a type (size and pitch) that they will develop sufficient pull to take care of the 10-ft. length. I believe that some of the manufacturers of portable mixers have catalogs which show diagram charts that give a pretty fair idea as to the various ways the agitators can be mounted or inserted in a tank or container.

My second recommendation is to install a circulating pump system, set up to draw off material at the end where dipped parts leave the tank and to pump material back into the tank at the input end. You should include a screening arrangement at the input end so that only clean filtered material will enter the tank. The material should be fed back into the tank below the top level of the paint, so as to decrease aeration (putting air into the paint) to a minimum.

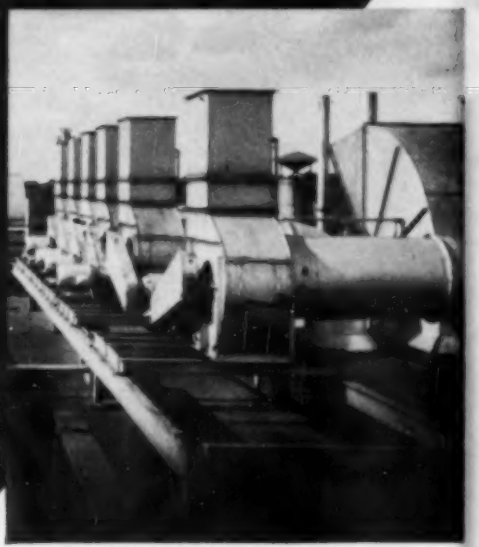
I believe the circulating system would be much more practical than an immersed agitator, regardless of the agitator mounting.

As you may know, aeration (introducing air into the paint) causes increased viscosity of many protective coatings used in dip tanks; however, this may not present a problem in your case. If "bodying" should be encountered, the paint supplier can introduce sufficient anti-oxidant to maintain tank stability. This can be determined after a few weeks of operating the revised system.

I believe that sufficient movement will take place by drawing paint out of one end of the tank and pumping it back in at the opposite end, to eliminate problems now posed by lack of agitation. Running time, etc., can best be determined after the pumping starts; however, if paint settles badly overnight I feel that your paint supplier should formulate his mate-

For Better Working Conditions in Paint Spray Departments

Be Sure - specify "Buffalo" FANS ON YOUR EXHAUST SYSTEMS



"BUFFALO" INDUSTRIAL EXHAUSTERS
("MW" for Material Handling, "AW" for more efficient Air Handling.)

- DEPENDABLE—"Buffalo" Fans have earned this reputation in every industry in exhaust systems.
- EFFICIENT—a complete range of centrifugal and axial flow fans, a satisfactory fan for your particular installation.
- LOWER COST IN THE LONG RUN! "Buffalo" Fans are long lasting and simple to service—saving on both power and maintenance.
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"Buffalo" First For Fans

BUFFALO "Buffalo" FORGE COMPANY

532 BROADWAY BUFFALO, NEW YORK

Canadian Blower & Forge Co., Ltd., Kitchener, Ont.

Branch Offices in All Principal Cities

VENTILATING AIR WASHING AIR TEMPERING INDUCED DRAFT EXHAUSTING
FORCED DRAFT COOLING HEATING PRESSURE BLOWING

rial differently so as to incorporate some non-settling qualities into the product.—A. P. LEHMANN.

I do not believe that agitators in your dip tank will help you in any way. Why? Well, to convince yourself, try a little experiment when you go home tonight. Run water into your bathtub—which is not 10-ft. long—to make it 2/3 or ¾ full. Borrow your wife's Mixmaster and remove one beater. Start the Mixmaster and lower it so that only the beater blades are submerged. Try it anywhere you wish—near the middle of the tub or at either end. You will find that very little of the water is being agitated. Your dip tank condition is the same.

Several agitators would be necessary, and the square corners of your tank will not permit an even liquid movement; solids (settled pigment) will be pushed into the corners and along the bottom edge of the walls.

I suggest pumping the material—withdrawing it from near the surface of the paint in the tank and pumping it back into the tank through several holes in a horizontal pipe (closed at each end) which extends the full length of the tank and which lies at or near the bottom. With this setup the paint movement would then be at the bottom of the tank—where it should be—thoroughly mixing vehicle and solids throughout the full length of the tank and without trapping air which is usually caused by rapid agitation.

The type of pump is important. If a standard oil paint is used, a rotary pump will serve your purpose. If the paints are abrasive, I would suggest a glass-lined pump. If you wish I will test samples of your materials without charge and recommend the type of pump to use.—W. BEACHAM, Crystal Laboratories.

Moisture in Insulated Cabinet Doors

We have a serious problem in the finishing of our metal kitchen cabinets. Our Deluxe line of wall cabinets is manufactured with insulation composed of celluphone. These doors and drawers go through our washing machine, which is a process of cleaning and Bonderizing.

A certain amount of liquid chemicals enter and remain inside the doors, despite the fact that the doors pass through a conveyorized dry-off oven (300° F.) which is approximately 40-ft. long. A certain amount of dripping occurs and this presents a serious problem in our finishing department.

We want to overcome this problem in order to prepare these cabinets for painting. Surely there is someone who can supply us with the answer. Anything you may be able to do along these lines, to solve this problem, will be greatly appreciated. —G. METAL PRODUCTS CO.

As I see it, you have a choice of the following:

1) Plug or seal (permanently or temporarily) the holes, cracks or openings which allow cleaner fluid to get inside the doors. Then you can continue with your present wet cleaning operations.

2) Do the wet cleaning and Bonderizing before the doors are assembled (before insulation is put in). After assembly, wipe the outside surface clean with solvent—following, if necessary, with a short quick dry-off in an oven.

3) Omit the wet-cleaning process and dry clean the assembled doors in a burn-off oven. This may call for a temperature as high as 400° to 450° F. Oil, grease, smudges of shop dirt, etc., will vaporize and quickly disappear during this heat treatment. A

Check

THESE PERFECTION ADVANTAGES *for Yourself*

- ✓ **FULL RANGE OF SHEENS** . . . from dead flat to gloss
- ✓ **NO DULLING OR CLOUDY FLATTENING AGENTS** added
- ✓ **A BEAUTIFUL RUBBED EFFECT** . . . will rub clean and clear
- ✓ **WILL EITHER AIR OR FORCE DRY**
- ✓ **OUR SUPERIOR PROCESS IN CHEMICALLY TREATING RESINS DEVELOPS A FINISH SO SMOOTH . . . YOU CAN FEEL THE DIFFERENCE**

4 TYPES OF SYNTHETIC FLAT FINISHES TO CONFORM TO YOUR NEEDS . . . POCKETBOOK . . . DRYING SCHEDULE

1. **PERLAC SATIN FINISH** . . . out of the dust in 5 to 7 minutes . . . one coat looks and rubs like two coats of lacquer . . . liquor proof . . . water proof . . . won't haze or sweat back.
2. **PERFEX SATIN FINISH** . . . quick set . . . quick dry . . . water proof . . . liquor proof . . . full smooth body . . . won't haze or sweat back.
3. **PERFECTION SYNTHETIC FLAT FINISH** . . . water proof . . . liquor proof . . . beautiful rubbed effect.
4. **PERFECTION QUICK DRY FLAT VARNISH** . . . beautiful, rubbed effect, or rubs well . . . smooth.

PERFECTION
PAINT AND COLOR CO.
715 E. Maryland St.
INDIANAPOLIS 2
INDIANA

very slight trace of surface residue may remain, but this can be easily and quickly removed by hand wiping with clean dry waste, cloths or tack rags.

Before committing yourself to this burn-off process, you should check carefully into the possibility that this high heat may warp or distort the sheet metal temporarily or permanently.

Other means of dry cleaning are to lightly blast the surfaces with fine abrasive or wire brush them with power-driven wire brushes. Of course, any kind of dry-cleaning would not include a rust-proofing process. If rust-proofing is necessary you could use a rust-proofing primer coat.—C.J.S.

You mention celluphone (?) insulation. The spelling may be wrong here; my guess is that the ending of the word is "foam" rather than "phone."

If the doors are completed fabrications with some kind of blanket insulation enclosed in the metal casing, the problem is a real one because the insulation fibers have a tendency to hold the liquid and retard free flowing drainage, causing an almost constant drip, even after passing through the drying oven. While the length of drying oven and the temperature are noted in your letter, I notice an important omission; the conveyor speed or time permitted for the drying cycle is not given. This is important because, though the temperature is high enough, the time cycle may be too short to permit the parts to reach a temperature that would accelerate evaporation of the liquid or entrapped water.

I will offer a few suggestions on which I could be sticking out my chin, since important factors such as insulation material and time and temperature cycle are not clear.

First I would use an air blowout if it would not cause harmful movement or displacement of the insulation packing. This could be used before or after the trip through a dry-off oven. If it is used afterward it may be that enough metal heat would be retained to evaporate the moisture remaining on the surface.

Check the temperature of the metal parts coming through the oven. It may be that the oven heat is not sufficient. If not, increase the oven temperature so that parts will be heated to top tolerance without metal distortion.

The air blow-off and blow-out, coupled with sufficient oven heat, is all I could offer without additional information concerning the operation. —A. P. LEHMANN.

I would like to simplify your water-logged insulation problem. You have the same condition as placing a sponge in a tin can, closing the lid (not a water-tight lid) of the can and placing it in water. Pressure of the water will force out the air, and the sponge will become saturated.

Without opening the cover of the can, we pass that can through an oven which has sufficient heat to boil the water in the sponge. Some of the steam leaving the sponge will force its way out around the cover, but a lot of the steam will remain and condense on the walls, running back down into the sponge. Pressure of hot air in the oven is greater than the pressure of liquid in the sponge, and the moisture cannot get away.

You have the same condition. Your insulation is becoming water-logged and the pressure in the oven prevents most of the moisture from forcing its way out through the cracks and small openings.

When the pressure is released by cooling and the steam condenses, the surface tension of the water has been diminished by boiling and will, with the aid of gravity and the wicking

Selling on Sight!

EGYPTIAN'S *NEW*
5-MU BAKING ONE COAT HAMMERED FINISH
has destroyed all our carefully thought out sales plans!

We wanted to tell people that:

A. It is the most beautiful hammer coat ever seen.

B. It has matchless toughness.

C. It is extremely durable.

— but three out of four firms just looked at it, and bought it on the spot.

Wouldn't you like to see it?

5-MU can be made in a variety of eye-appealing colors.

The Egyptian Lacquer Manufacturing Company
P.O. Box 444, Newark 1, N. J.

I would like more facts about 5-MU.

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Firm.....

Address.....

Product.....

So. Kearny, N. J.

EGYPTIAN
INDUSTRIAL FINISHES

Lafayette, Ind.

action of the steel, overcome the pressure of free air, and slowly dribble or drip from the insulation.

If large openings are supplied to drain the water, this problem would not occur.

To prove this to yourself and to decide the best method of removing the water, take a milk bottle and cut a piece of ordinary fly screen to the shape and size of the wax paper press-on cap. Press the fly screen cap down into the mouth of the milk bottle in the same manner as you would replace the wax paper cap. Fill the bottle with water; place your hand over the bottle and turn it upside down; then take your hand away.

You will find that the air pressure on the outside of the bottle is strong enough to prevent the water from flowing out until you tip the bottle to one side and overcome the free air pressure. If you make the holes in the fly screen larger the water will overcome the free air pressure and flow out of the bottle.

With this experiment you have demonstrated to yourself the action of pressure so that all that is left to decide is: Is it cheaper to perforate the bottom of the doors and drawers with perforations large enough to overcome the outside pressure, or install a suction type of unit to pull all of the excess moisture out of the cracks of the doors and drawers? If you decide upon the suction type equipment, I believe you will have to build the unit to suit your particular problem.—W. BEACHAM, Crystal Laboratories.

Chemical Blacking Salt

The A. F. Holden Co., New Haven, Conn. and Detroit, Mich., announces the manufacture of a new low cost blacking process.

The weight of chemicals per gallon of water solution is only 3-lbs. The process, as developed, is designed for blacking stainless steels, cast iron, malleable iron, as well as SAE or any steels.

Gables Sell Their Interest in Indianapolis Varnish Co.

Mr. Fred B. Gable, Edwin H. Gable and George Gable announce the sale of their entire stock in the Indianapolis Varnish Co. to Albert J. Heberer and Associates. The three Gables, who are the principal stockholders in Perfection Paint and Color Co., have been the principal stockholders in the Indianapolis Varnish Co. since 1945. The sale of stock severs all connections between the Perfection Paint and Color Company and its officers and the Indianapolis Varnish Co.

DeVilbiss Assembly-Distributing Plant in Santa Clara, Calif.

The DeVilbiss Co. will open a new assembling, warehousing and distributing plant in Santa Clara, Calif., about June 1. At its main office and plant in Toledo, Ohio, the DeVilbiss Co. manufactures complete spray-painting equipment, air compressors, hose, spray paint booths, atomizers and related items. The new plant will serve the territory covered by DeVilbiss sales branches in San Francisco, Los Angeles and Salt Lake City.

Dr. Marcus Thau Organizes New Plant in Newark, N.J.

Universal Coatings, Inc., is the name of a new company organized by Dr. Marcus Thau, who has had 27 years of service in the industry, with developments in dyes, synthetic resins, protective and decorative coatings. The laboratory and factory are located at Ten Avenue C, Newark 5, N. J.

Among Dr. Thau's most important contributions in recent years is the formulation of exterior aircraft finishes designed to reduce friction in flight and thereby increase the speed of planes.

The new company will enter activities not only to create engineered finishes to meet all specific industrial problems, but will continue to answer the requirements for enhancing adhesion universally, whatever the use and whatsoever the base.

Dr. Thau is a member of the American Chemical Society. In the New York Paint, Varnish & Lacquer Production Club he is chairman of the subcommittee investigating electrical properties of pigmented films.

SPRAY IT— Better, Faster, For Less!

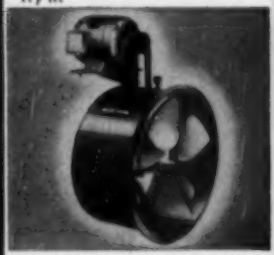
BLACK

Better equipment means more profit from spray operations. Specify Black Arrow . . . famous for "HOLLOW AIR" Spray Guns.

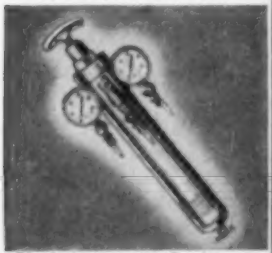
Black Arrow "HOLLOW AIR" Spray Gun. The finest all-around, all-purpose gun in use today. Try it!

Black Arrow Siphon Feed Outfit. Complete with "HOLLOW AIR" gun, container, air regulator and purifier, hose and wrench.

Black Arrow FIBR-GUN. The only "finished" FLOCK gun on the market. All three controls at rear of gun.



Black Arrow Exhaust Units. Range from 12" to 42" diameters — meet all Underwriters' specifications.



Black Arrow Air Conditioners All price ranges—the only make fabricated of 100% non-rusting materials.

Black Arrow General Utility Spray Gun. Lightweight, efficient —operates at minimum pressures with low air consumption.

Black Arrow Compressors. All sizes and models, portable and stationary—½ to 15 H.P., single and two stage.

Black Arrow Pressure Outfits. Range from two to fifteen gallons. Complete in every detail.

"SEE YOUR JOBBER"

The Black Manufacturing Co.
Parkton 73, Maryland

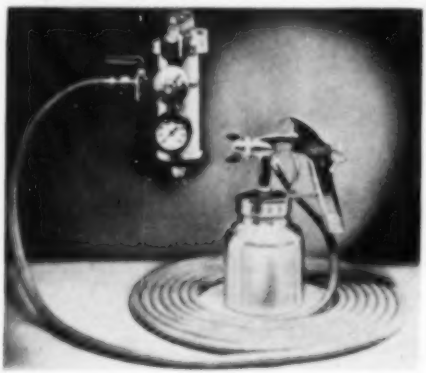
BLACK

Sprays Wax on Automobiles

To help garages, service stations, and automobile dealers take full advantage of the new wax spraying methods, Binks Mfg. Co., 3122 Carroll Ave., Chicago 12, Ill., announces its new S-555 wax spray outfit, designed especially for spraying autos with any of the liquid auto waxes.

This new wax spray outfit cuts car waxing time to a matter of minutes; makes waxing more profitable. When modern liquid waxes are properly sprayed, rubbing and buffing are eliminated.

To get best results, it is important that atomization of a liquid wax be correct and that the wax be applied in a thin, uniform coating. To assure such performance, Binks has developed the new Model 8E Spray Gun. The 78 x 78S nozzle on this gun delivers a fine, uniform spray, which dries quickly into a gleaming long-life wax coating.



Binks wax spraying equipment.

Everything necessary for fast, quality car waxing is included in the Binks S-555 outfit—spray gun, oil and water extractor, pressure regulator, 25-ft. of hose and connections.

Clear Gloss Rubbing Lacquer

New York Woodfinishers' Supply Co., 109 Imlay St., Brooklyn, N.Y., announces the introduction of the New Period No. 819 clear gloss rubbing lacquer.

This new development in wood finishing has outstanding build, flexibility and durability. Reports from users say it is exceptionally easy rubbing. The use of New Period No. 819 clear gloss rubbing lacquer assures a high quality finish of lasting beauty.

High Viscosity Lacquer

Hy-Vis-O-Lac is a wood finishing lacquer designed to make available some of the advantages of "hot lacquer" to the user who does not wish to invest in special equipment. It is sprayed with standard guns and fluid lines but requires fluid and air pressures somewhat above the normal range—fluid pressure of 40-lbs. and air pressure of 90-lbs. In spite of the high viscosity it breaks up and flows out to smoothness better than average lacquers in the normal viscosity range.

Hy-Vis-O-Lac carries 35% solids. Because of its viscosity characteristics it sets rapidly, therefore, permits loading to substantially heavier coatings than can be applied with

FOR THE BENEFIT OF MANUFACTURERS
AND USERS OF LACQUER

COMMERCIAL SOLVENTS CORPORATION

dedicates

THE HOT-LACQUER PROCESS

(U. S. Patent No. 2,150,096)

TO THE LACQUER INDUSTRY

Commercial Solvents Corporation is pleased to announce that, retroactive to January 1, 1950, it dedicates its patent on the hot-lacquer process to the lacquer industry—so that all may benefit by its free use.

This process can be adapted profitably in any application where lacquer is suitable, with the big advantage of substantially reduced finishing costs. Satisfactory equipment for applying hot lacquer is now available at reasonable cost from several manufacturers.

If you are not already familiar with this preferred process, we will be glad to send you detailed information.

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PRODUCTS: Ethyl Alcohol & Derivatives • Acetone • Butanol & Derivatives • Formaldehyde
Methanol • Amines • Nitroparaffins • Crystalline Riboflavin

lower viscosity materials. It has been used as a one-coat finish direct to wood for such application as juvenile furniture, game boards, and a variety of wood novelties and equipment made with small-pore woods.

It has been used in other cases as a one-coat finish over sealer on all woods and on various types of furniture. In rubbing qualities, print resistance, toughness, cold-check resistance and overall durability, it is equal to other top grade lacquers.

This wood-finishing lacquer is a product of Grand Rapids Varnish Corporation, Grand Rapids 2, Mich.

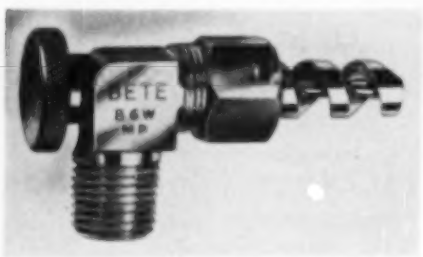
New Spiral Nozzle For Wide Angle Spray

Unusually wide angle sprays (for water, cleaning and rinsing solutions, etc.) can now be obtained by means of a newly designed spiral nozzle, according to an announcement by the Bete Fog Nozzle Co., Greenfield, Mass.

The new nozzle is the latest addition to a line of nozzles using a unique patented spiral principle, first put on the market last year by the Bete Company.

In addition to the wide angle of spray, the new nozzle was designed for low flow rates and requires extremely low pressures, according to the manufacturer. It will produce fine and uniform drop sizes with a 180° umbrella spray pattern of wide coverage.

The nozzle, due to its spiral design, is relatively non-clogging and can be easily cleaned on the job by means of removable pin. The pin itself is interchangeable to provide for different flow rates. The new nozzle is now available in two sizes.



Wide angle spray patterns & low flow rates.

Mar-Resistant Bake Finish

A recent development in synthetic enamel formulations has been introduced by the Lacquer & Chemical Corp., 220 40th St., Brooklyn 32, N.Y., under the trade name "Porsalaka". This material was developed for use on metals to replace the more expensive and tedious hot firing or porcelainizing operation.

"Porsalaka" may be applied by spray, dip, or roller coating, and when baked for 15 minutes at 300° F. it gives a hard, high gloss, mar resistant finish. It is available in white, black, and all colors, and is excellent for use on fluorescent fixtures, refrigerators, washing machines, and kitchen cabinets.

Machine Automatically Sprays Intricate Color Separation

A new machine for automatic spray decorating a variety of small plastic and metal parts, on a mass production basis, has been designed and built by Conforming Matrix Corp., 31 Toledo Factories Bldg., Toledo 2, Ohio.

By use of different electro-formed masks, which are readily interchangeable in the machine, and a resetting of the gun angles, many parts can be spray painted at speeds of from 700 to 3600 pieces per hour. Most parts can be handled at a rate of 1500 or more pieces per hour.

The machine is entirely air operated. Masks for a particular part

NACROMER is an excellent substitute for Pearl Essence where cost is a factor and where the high brilliance of natural pearl is not necessary.

It is—

- **Stable**
- **INERT**
- **NON-CORROSIVE**

Sample and literature sent on request.

THE MEARL CORPORATION

153 WAVERLY PLACE NEW YORK, N. Y.

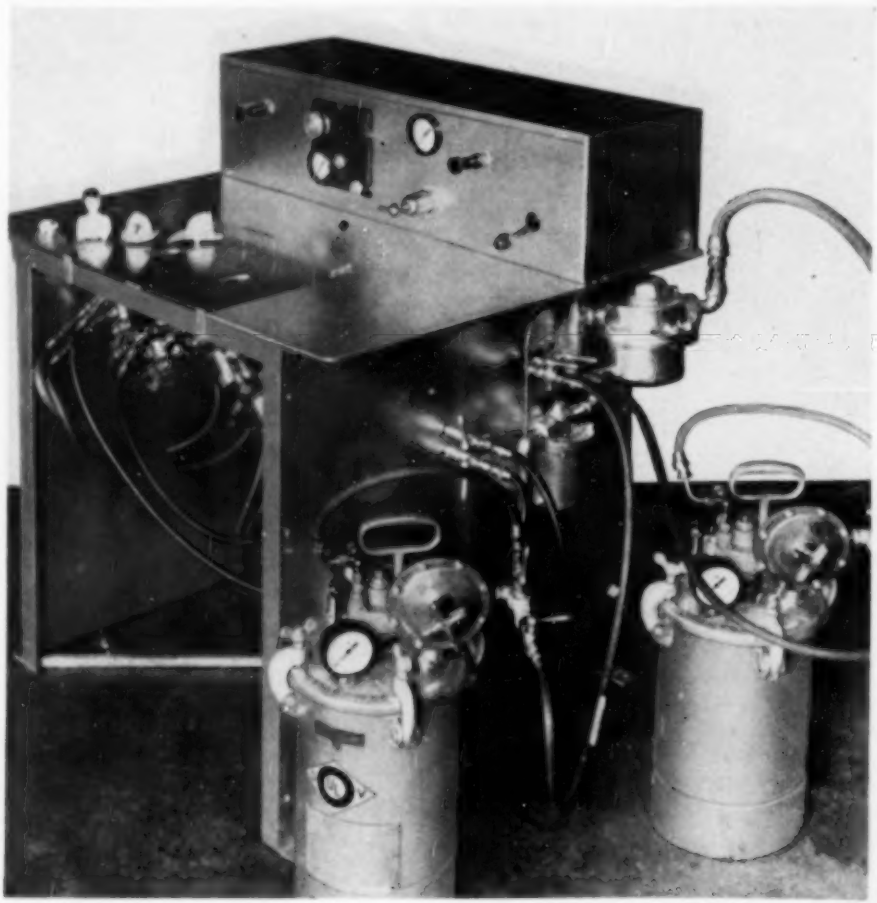
"World's Largest Producer of Pearl Essence"

and color are so inserted as to be flush with the top of the working table.

Spray painting is from below, and against the masks. Surplus spray falls away, is sucked off and exhausted at the back of the machine.

The operator holds the parts down from above, exerting only the necessary manual pressure for proper sealing of pieces against the masks. Two-color parts can be painted, one color right after another, depending upon the nature of the job. One hand dial regulates the amount of paint sprayed.

Once the machine is set, the same amount of paint is always sprayed on every part regardless of the speed of leading cycle, thus effecting a paint savings of up to 50% over hand spraying. The same results are obtained by fast and slow operators. As an operator becomes more skilled,



Clean accurate color separation spraying, through formed masks, occurs under work table.

NATIONAL'S "Mity-Midget"

FOR WORK OF ANY SIZE

Whether removing burrs on huge castings or putting a fine finish on relatively small surfaces, National's "Model 400" will do the job better and faster. Has a 3/16" orbital stroke . . . operates at 5000 to 6000 rpm . . . weighs only 4 lbs. . . . costs $79.50. Reliable . . . powerful . . . will not stall. Write for full details today or see your dealer.

MODEL 400

Fast...Light...Powerful!

NATIONAL AIR SANDER, INC.
2818 AUBURN ST., ROCKFORD, ILLINOIS

a turn of the dial steps up the cycling speed to his capacity. Some operators load up to 80 pieces per minute.

The machine is compact and measures 48-in. wide by 36-in. deep and has a table height of 30-in. It employs eight automatic spray guns and two 2-gallon air-agitated paint pressure tanks with four insert containers. Air regulator for the guns, filter and automatic moisture trap are standard equipment. A second air regulator controlling the machine mechanism, as distinguished from the atomized air for the spray guns, is also provided. All controls except the "start" and "stop" push buttons, are mounted in the control panel.

All that is required is an air supply, which will maintain 80-lbs. minimum pressure, and the necessary electro-formed masks. Conveyor belts which move across the table top of the machine in synchronization with the loading cycle are available as extra equipment.

The electro-formed masks, which are made by patented process by Conforming Matrix Corp., are of the lip type, plug type, block cut-out plane surface type for use with concave, convex or irregularly shaped 3-dimensional parts. Accurate and snug fitting, they permit fast, clean, economical operation with no fogged edges.

The "loose" insides of letters and numerals, such as "O" and "6", are held in position by arched bridging to effect perfect character without objectionable "ties."

Strand Division of Balmar Corp. Stays in Chicago

The Balmar Corp. of Baltimore, who purchased the N. A. Strand Co., of Chicago last year, announces that the plant will remain in Chicago and will be known as the N. A. Strand Division of The Balmar Corp. The N. A. Strand Division manufactures Strand flexible shafts and flexible shaft machines, well known throughout the country.

New Wood Preservative

Monsanto Chemical Co., St. Louis 4, Mo., announces that its chemical pentachlorophenol is now available nationally in a 1-to-10 concentrate as a permanent, non-discoloring and paintable wood preserver and termite repellent for home and industrial use.

One gallon of the concentrate may be diluted with recommended oils to yield 11 gallons of a 5% pentachlorophenol solution. It may be brushed or sprayed to protect existing structures or employed as a dip for such items as fence posts and small-lot construction materials, particularly for ground and near-ground installations.

Industrial uses include the treatment of loading platforms, decking, roofing and timbers.

Fast-Drying, Hard Surface Synthetic Enamel

A new, fast-drying enamel that can reduce a manufacturer's finishing time and cut his storage and handling requirements has been introduced by the United Lacquer Mfg. Corp., Linden, N.J.

Known as Base Y 2054, the new synthetic protective coating provides the hardness of a baked-on synthetic, but air dries as fast as lacquer, in just a few minutes.

Base Y 2054 was designed particularly for plants that do not have baking facilities. By providing a hard, highly-resistant top surface quickly, the new finish speeds up the manufacturing process for these plants and eliminates the need for a 24-hour air-drying period. Products finished with this synthetic may be handled and stacked within 15 minutes and packed in three to four hours.

The new synthetic offers a higher build, a better gloss where desired,

with KETONE Lacquer Solvents

Be sure YOUR solvents also offer these advantages:

1. **High solids content**
2. **Freedom from cold check problems**
3. **Low viscosity formulations**
4. **Low specific gravity**

POWERFUL KETONE Solvents permit the use of more low-cost diluent, without changing quality of your product.

Have you heard the *full* story on the cost-cutting advantages of Ketone Solvents? Call your Shell Chemical Representative and have him point out the basic factors that will enable you to profit by the competitive advantage of Ketone formulations.

SHELL CHEMICAL CORPORATION

Eastern Division: 500 Fifth Avenue, New York 18 **Western Division: 100 Bush Street, San Francisco 6**

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tougher film, and high resistance to alkalis, fats, grease and smoke. It is equally effective on wood, metal, or fiber products. It may be polished to a hard gloss and has outstanding gloss and color retention, even under high humidity conditions.

The flexible and hard surface provided by Base Y 2054 will also make it useful to users of such finishes who do have their own baking facilities.

Non-Skid Floor Coating

Maas & Waldstein Co., manufacturer of lacquers and synthetic enamels, Newark, N.J., Chicago and Los Angeles, has recently developed a new and special type of coating that is being used as a non-skid floor coating for application on floors of walk-in deep freeze units, walk-in refrigerators, hotel and pullman-car kitchens, and hospital operating and delivery rooms.

This new and effective non-skid floor coating is known as Durvin Gray A. D. Non-Skid Coating SV-363.

Once applied to metal, wood, or tile floors, the new coating provides a safe, skid-resistant covering wherever it is used. It is not affected by fruit juices, butter, milk, animal or human blood and may be cleaned by brushing or washing.

New Pre-Paint Cleaner Does Three Jobs In One

How a new pre-paint metal-cleaning material, Oakite Compound No. 33, removes oil, removes rust, and prepares metal for paint in a single procedure, is described in a special Service Report just issued by Oakite Products, Inc., 132F Thames St., New York 6, N.Y.

Oakite Compound No. 33 has solvent and detergent properties which are extremely effective in removing stamping and forming oils, rust preventives, carbon smuts, soldering and welding fluxes, identification inks and similar soils. In addition, this material is said to contain acid ingredients that act on rust, heat scale, tarnish and other oxides; to have special accelerating agents that make rust removal (along with removal of oil) an amazingly fast operation.

The Service Report states that this material converts the surface layer of metal into a thin film of insoluble phosphates, which provides an excellent bond for paint. Material is said to have similar etching and conditioning action on aluminum sheets and aluminum castings.

Reinforced Tape for Packing

The Industrial Tape Corp., New Brunswick, N.J., introduced its new Fiberglas Reinforced Tape, Permacel-15, at the National Packaging Exposition in Chicago, April 24-27.

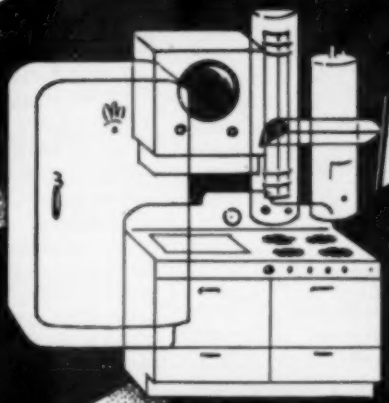
Permacel - 15, a pressure - sensitive tape, offers a combination of charac-

Strong pressure sensitive tape for packaging.

New ALL-AROUND champion . . . . . .

SUPERIOR COLOR RETENTION

IMPROVED ADHESION



MAR RESISTANCE

MORE MILEAGE

EASIER HANDLING

EXTREME TOUGHNESS

VERY ATTRACTIVE PRICE

H22 BAKING WHITE enamel

. . . . . scores well on all points. A perfect answer for simpler purchases and faster, more versatile production.

ANDREW BROWN COMPANY

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Irving (Dallas), Texas — 1223 East Pike Street, Seattle 22, Washington

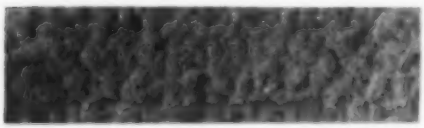
teristics for efficient and economical packaging, bundling, shipping and storing. It has a tensile strength of approximately 200 lbs., adheres at a touch and requires no tools for application, cannot harm cable insulation and will not mar polished metal.

Strong, fine-spun glass threads are sealed to tough kraft paper backing with adhesive coating to make Permacel-15 a pressure sensitive tape that is both extra strong and ideally flexible. The backing is 30-lb. crepe paper laminated with approximately 45 glass threads to the inch of width and coated with a stain-resistant, pressure sensitive adhesive. Its average adhesion is 27-oz. per inch of width.

One-Coat Hammer Finish

A consistently reproducible hammer finish can be applied to metals with a one-coat spray, using Duraplex C-55X and Parlon, it has been established by the Resinous Products Division of Rohm & Haas Co., Philadelphia, Penna. The method entails careful but not difficult control of spray procedure and conditions.

In a laboratory program recently completed, it was found that reproducibility of the hammer pattern is regulated by gun pressure, film thickness, set time and other factors. For best results, the coating should be sprayed at a viscosity of 62 seconds on a No. 4 Ford cup, using a specified air cap on the spray gun, and a pressure of 15-psi. through the feed cup. Atomizing pressure through the spray gun was 50-psi. Tinting pastes, added in extremely small amounts, accentuate the hammer effect. This finish dries tack-free in 60 to 90 minutes and shows a Sward rocker hardness of 26 to 30 after a 16-hour dry.



This hammer-effect pattern can be varied.

Variables found to affect the size of the hammered pattern include the following:

1) Increasing pressure through the spray gun increases the size of the pattern.

2) Raising pressure on the feed cup gives a larger pattern and deposits a heavier film.

3) The more the enamel is atomized as it leaves the spray gun, the less it tends to form a hammered texture. (This adjustment is possibly the most important single factor in gaining uniformity.)

4) Addition of butanol has an important effect in improving the hammer pattern.

5) Optimum hammer effect is obtained with a one-mil (thickness) dry film. Heavier films tend to reduce the hammer texture.

6) The hammer effect is produced before the finish sets. Therefore, the longer the set time used, the bigger will be the type of texture formed.

Duraplex C-55X is an oxidizing phthalic alkyd resin developed recently to meet the stringent requirements of automotive refinishing work. It is said to contribute fast drying, durability, good gloss and color retention as a paint vehicle.

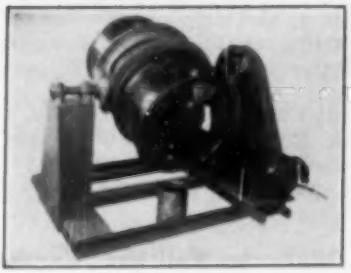
Deep Mirror-like Jet Black

The Watson-Standard Co., 225 Galveston Ave., Pittsburgh 19, Pa., announces a new improved black litho for the metal decorating industry.

This new black, Watson-Standard 10-197A is a blacker black. The term "blacker black" is used to describe the unusual depth and intensity of the blackness of this finish. Objectionable undertones common in most blacks have been eliminated. When fabri-

CHANGE DRUM TUMBLER

Mixes in Suppliers' Drums



AVOIDS:

The fire hazard of open drums
Contamination of one product with another
Cleaning of equipment between mixes
Residual sludge.

ASSURES:

Uniform mix
Easy inspection during operation
Withdrawals in any quantity needed

Portable ramps for fast insertion and removal of containers
Hand Control at motor to place drum in any position

THE VOL-U-METER Company, Buffalo 16, N. Y.

QUALASOLE

AMERICA'S FINEST PADDING LACQUER

Creates new life in wood

- **It is the Modern French polish**
- **Produces a beautiful, rich finish**
- **Can be applied easily with a pad**
- **Quick drying, durable, permanent**
- **Meets present day production demands**
- **No other finish compares with QUALASOLE**

Order a Trial Gallon Can Today!

QUALATONE PRODUCTS INCORPORATED

21 GAY STREET, NEW YORK 14, N. Y.

cated into a closure or cap, the intensity of the blackness may be compared to that of a plastic molded closure.

The new 10-197A Black Litho Finish is primarily formulated for roller-coating. The excellent fabrication and tumbling qualities make it especially suitable to the cap and closure industry. It is easily applied in the normal roller coating technique. Complete information regarding this improved black may be obtained from the manufacturer.

Sticks to Polished Chrome

Vinrex describes a new line of scientifically formulated specialty coatings that stick exceptionally well to highly polished chrome, brass, aluminum and even zinc plate.

Chrome plated pieces finished with one coat of Vinrex white have withstood over 1000 hours water immersion, with no loss of adhesion or gloss, or any sign of blistering after this abuse. These coatings are available in clear, black, white and some colors. Manufacturer is Rexton Finishes, Inc., 62 Woolsey St., Irvington 11, N.J.

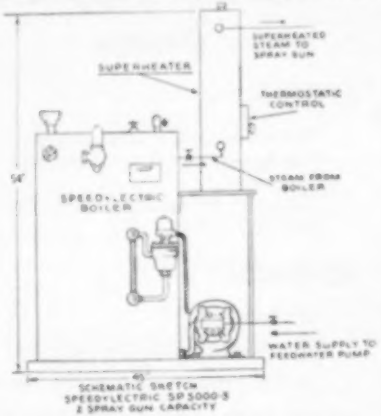
Steam-Spray Painting

According to a news release from Livingstone Engineering Co., 100 Grove St., Worcester 5, Mass., a leading manufacturer of paints, chemicals and lacquers recently announced the results of research in the field of spray painting, using steam instead of compressed air. Tests indicate the following:

1) One pass application for 2 mils thickness of film.

2) Paint is saved through less overspray, and thinner is saved through the smaller reduction required for spraying.

Pioneering in this radical change in spray-painting technique—this new application for electric steam, Livingstone Engineering Co. announces the Speedylectric SP500, an all-electric steam power plant complete with built-in boiler, A.S.M.E. Code, National Board inspected and stamped,



It generates steam for spray painting.

Underwriters' Laboratories listed. The SP500 includes an electric superheater with thermostatic control and boiler feed pump, motors and controls. The boiler is self-regulating, maintaining electric imput in exact balance with steam output. It is available in a range of capacities from one to ten spray guns or larger. This equipment is without flame or fire hazards, free from all low water danger, and has no coils or tubes to burn out, to scale or replace.

Merits of End-O-Rust

Although created primarily for use on metals, the extraordinary sealing power of End-O-Rust (made by End-O-Rust, Inc., 1900 Euclid Avenue, Cleveland, Ohio) adapts it with special success for use on concrete, wood, fiber, or any surface where more than normal protection is needed.

Location and laboratory tests have

If you want to cut product-identification costs . . .

CONSIDER SILK SCREEN PRINTING

Any design in any color or number of colors can be applied DIRECTLY to metal, wood, plastic, etc. Economical for large and small designs in any quantities. Silk screening gives clear sharp detail and a tough permanent finish that withstands handling, abrasion, outdoor exposure.

Ask our specialists for advice on the next job. We have 25 years experience in the silk screen industry and can supply everything you need for fast, economical product-MARKING.

Write Department IF 5-50 for Further Information.

Naz-Dar Company

469-483 MILWAUKEE AVE., CHICAGO 10, ILL.

BOOKS On Finishing Available

"MODERN ORGANIC FINISHES—Their Application to Industrial Products" (452 pages) New	$8.50
"CHEMICAL FORMULARY" (Vol. VIII)	7.00
"FINISHING METAL PRODUCTS"—2nd ed. (352 pages)	4.00
"PRACTICAL FURNITURE FINISHING" (112 pages)	1.25
"FURNITURE FINISHING" (543 pages)	4.00
"SPRAY PAINTING"—Industrial and Commercial (169 pages)	2.00
"THE MIXING OF COLORS AND PAINTS" (292 Pages)	2.50
"WOOD FINISHING" (361 pages)	2.50
"NATIONAL PAINT DICTIONARY" (704 pages)	7.50
"MODERN POLISHES AND SPECIALTIES" (313 Pages)	7.50
"PRACTICAL COLOR SIMPLIFIED" (128 Pages)	5.00
"GRAINING"—Ancient and Modern (224 Pages)	4.00
"THE SILK SCREEN PRINTING PROCESS" (225 pages)	4.00
"INDUSTRIAL APPLICATIONS OF INFRA-RED" (200 pages)	3.50

Cash Must Accompany Order—Send for Descriptive Circular

INDUSTRIAL FINISHING

1142 NORTH MERIDIAN STREET INDIANAPOLIS 4, INDIANA

revealed amazing capacity of resistance such as 2000 hours of salt spray, exceptional resistance to caustic soda, ammonia, sulfuric, nitric, acetic, hydrochloric acids, and years long periods on structural elements subject to temperature ranges of zero to 100° F.

With End-O-Rust, complete protection is achieved without costly dip and heat treating methods. No special preparation of surface needed.

Quick drying is a notable characteristic of End-O-Rust. It will air-dry for handling in two to three hours, force dry within 30 minutes, and infra-red bake three to five minutes.

This End-O-Rust product has a high hard gloss finish and is impervious to abrasion, weathering and hard wear. It is especially recommended for coastal areas to withstand dampness, humidity or salt air.

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THE LOFGREN PROCESS

We RECOVER YOUR
SOLVENTS & THINNERS
From Wash Thinners - Spoilt Lacquers - Degreasing Machine Sludge, etc.

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SOLVENTS RECOVERY SERVICE
241 Brunswick St., Hammond, Ind.

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Complete Technical Service At Your Disposal

SNYDER BROTHERS COMPANY
Manufacturers of Quality INDUSTRIAL LACQUERS
P. O. BOX 548 — TOCCOA, GEORGIA

Gold Lacquers

The Watson-Standard Co., 225 Galveston Ave., Pittsburgh 19, Pa., announces the development of a series of gold lacquers for the metal decorating industry. These gold lacquers are suitable for can coatings, cap and closure coatings, crown coatings and other specialized uses. They are applicable where fabrication process, sterilizing, chemical resistance, adhesion and water resistance are required.

This series of gold lacquers includes a wide variety of types, depending on the end use. They are primarily based on oleo-resinous resins, alkyd resins, vinyl resins and other special gold lacquer vehicles.

A table of applications and uses of these gold lacquers has been prepared for the metal decorating industry. Complete information regarding same may be obtained from the manufacturer.

Synthetic Lacquer Screen Prints on Vinyl Plastic Products

Development of a new type of synthetic lacquer that permits beautiful and intricate designs to be screen-printed on vinyl without puckering the plastic's surface, is announced by The Monroe Sander Corporation, of Long Island City, N.Y., manufacturer of industrial finishes.

The new product, available in a wide variety of colors, can be used by manufacturers of vinyl plastic curtains, draperies, tablecloths and other household items; vinyl inflated toys; crib sheets and other babies' items; advertising displays; and novelties made of vinyl.

Monroe H. Sander, president, stated that, "previously, screen printing on vinyl plastic puckered its surface. Consequently, intricate designs were impossible."

FINISHES FOR THE PRODUCTS OF INDUSTRY

- NEOPRENE COATINGS
- VINYL FINISHES

Pioneers in* NEOPRENE *and* VINYL *Products

Write for Literature

GATES ENGINEERING CO.

NEW CASTLE, DELAWARE

BARRETT "FILWHIRL" ENAMELERS make easy work of many difficult coating problems

The Barrett Centrifugal Enameler

The Barrett "Filwhirl" Centrifugal Enameler provides a sure, clean and economical method of applying materials to parts or products that can be rotated. It saves coating material, time and expense. It is designed for bulk handling, and speedy production requirements.

It has proven highly successful in coating helical springs, clips, clasps, zipper parts, bead and link chain, toys, automobile and luggage hardware, misc. metal stampings, castings, etc. Excellent results are also obtained with japan, lacquers, varnishes, paints, waxes. No drips or fatty edges.

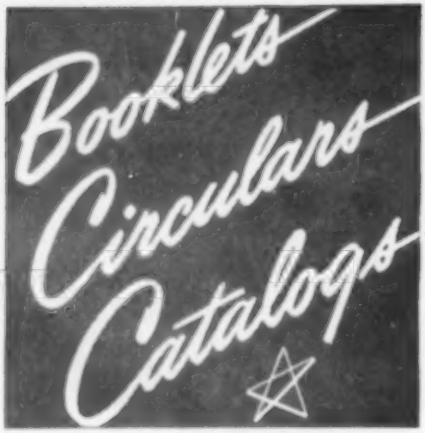
Furnished in spindle post, fixed bowl, and carrier types, in several capacities. Safety features included and auxiliary equipment is available.

Send a few representative samples to be processed and submitted for your examination.

THE LEON J. BARRETT COMPANY

Designers and Builders of Centrifugal Machinery

1703 GRAFTON ROAD WORCESTER 1, MASS.



Automatic Fire Protection for Industrial Application

A folder containing seven typewritten pages and eight photographs, prepared by Automatic Sprinkler Corporation of America, Youngstown 1, Ohio, presents a detailed description of Automatic Aer-O-Foam fire protection, as recently installed and tested at the plant of Schenectady Varnish Co., Schenectady, N.Y. As of December 1949, this is the first industrial application of this type of fire protection, and it is applicable for use in many industrial fields.

Guide to Planned Lighting

A new 32-page Planned Lighting Guide, covering the latest concepts of Planned Lighting, the benefits to be gained and the methods to employ to put a Planned Lighting Program into effect, has just been published by Benjamin Electric Mfg. Co., Des Plaines, Ill. Entitled, "A Planning Guide to Improved Plant Lighting," copies of the brochure are available without cost to industrial executives, plant operating personnel and all those concerned with industrial lighting.

The Guide covers the Planned Lighting subject from the management viewpoint, breaking the problem into three major parts: Economics, Program Development and Equipment Selection.

Anti-Rust Materials, Methods

How to combat rust throughout the production process in metal-working plants is the subject of a special Service Report just published by Oakite Products, Inc., 22 Thames St., New York 6, N.Y., manufacturer of industrial cleaning and allied materials.

This Service Report offers a concise description of specialized materials and procedures that, 1) remove rust from raw stock; 2) clean and derust in one operation; 3) prevent rust while parts are being processed; and 4) prepare metal for paint while affording protection against rust before and after painting.

Also reported upon are materials, for use by machine or tank methods, that remove buffing compounds, drawing and stamping compounds, cutting and grinding lubricants, mill and slushing oils, solid-particle dirts and smuts from metal parts, and at the same time provide efficient temporary protection against rust.

New Illustrated Catalog on Metal Cleaning

A new, illustrated catalog of metal cleaning and finishing machinery is available on request (please use company letterhead) to the Cincinnati Cleaning & Finishing Machinery Co., Schmidt Building, Cincinnati 2, Ohio.

Data in the 24-page catalog includes a brief discussion of metal cleaning principles plus photos and descriptions of more than a score of widely varying machine types. Many of the photos show "installed-in-operation" views, together with diagramatic details. A number of operational features, common to machinery designed and built by this manufacturer, are shown and described.

Monsanto Fire-Retardant for Textiles

A low-cost chemical composition for imparting fire retardant properties to all types of cellulose fabrics is described in a technical bulletin prepared by Monsanto Chemical Co., St. Louis 4, Mo.

Fabrics treated with the composition, called Monsanto Fire Retardant B, satisfactorily fulfill flame resistant requirements of Army Quartermaster Specifications JQD-242, Federal Specifications KKL-136B, National Bureau of Standards Commercial Standard CS-129-46, and the Pyrolysis test.

The 16-page bulletin contains a detailed explanation of what the composition does, what it is, and suggestions for application.

Book of A.S.T.M. Standards on Paint, Varnish and Lacquer

This compilation of A.S.T.M. Standards on paint, varnish, lacquer, and related products, as of December 1949, gives the more than 190 specifications, tests, and definitions in their latest form.

Specifications, test methods, and chemical analysis of pigments cover: white, black, mineral iron oxide, blue, green, yellow and orange, red, metallic, nonhiding, and miscellaneous. General test methods for pigments include alkalinity or acidity, bleeding, coarse particles, moisture, oil absorption, gravity, tinting strength and mass color of color pigments,

water in petroleum products and other bituminous materials.

There are specifications, test methods and definitions of terms relating to drying oils, paint driers, thinners, shellac, varnish and varnish materials. New material in this latest book includes some 24 tests and specifications not published in previous compilations.

Copies of this 680-page book can be procured from American Society for Testing Materials, 1916 Race St., Philadelphia 3, Pa., at $4.85 each.

Bulletins Describe Linings of Wood and Steel Tanks

Anybody can install corrosion-resisting linings, on old or new equipment. It is as simple as plastering a wall or grouting a floor, and very much like it. Resin and catalyst-bearing carbon powder are mixed into a stiff putty and applied by trowel. Bare wood surfaces need only be dry. If wet, the surface can be dried with a blow torch. Once set the lining cannot be removed from wood.

Good adhesion to clean steel is obtained by using a primer. The lining sets readily at room temperatures of 70° F. and above. Coats on vertical surfaces can be made 1/16-in. thick without sagging. Any desired thickness can be built up with succeeding coats. On all metal surfaces, Fiberglas cloth is laid between two coats of lining material.

Complete instructions for application are given in two new bulletins, C-6A and C-7, issued by the Carboline Co., 7603 Forsyth Blvd., St. Louis 5, Mo.

School for Finishers, Free

Finishine Laboratories, Inc., 627 Tallman St., Syracuse 4, N. Y., is holding free classes for finishers in various cities throughout the country. Some of the locations and dates are as follows: Troy, N. Y., Hendrick Hudson Hotel, May 25-26; Chicago, Ill., Hotel Knickerbocker, June 29-30; St. Louis, Mo., New Hotel Jefferson, July 10-11; New Orleans, La., about the middle of July. Later, classes will be held in Dallas, Texas; Los Angeles and San Francisco, Calif.

"Color Conditioning" Movie Free

"The Case for Color," a new 25-minute, 16-mm. sound movie in color explaining "Color Conditioning"—the Du Pont Company's painting plan—has been released. Showings to interested parties may be arranged without cost by writing to the Finishes Division of E. I. Du Pont De Nemours & Co. at Wilmington, Dela.

"Color Conditioning" involves the functional use of color wherever people work or congregate. The movie shows its application in schools, industrial plants, hospitals, stores, offices, restaurants, hotels, and other buildings.

In ten quick minutes . . . the new POLYTONE one-coat hammer is air-dry—and dust-free. It air-dries to handle in one hour . . . and to full hardness, overnight. Can be baked, if desired. Available in silver, gold, and other colors.

SEA-LAC

Duralac Chemical Corp.
84 LISTER AVE., NEWARK 5, N. J.

Industrial FINISHING Editorial

Test Materials for Performance Value

How well is this new or this different finishing material going to do on our products? Will it "craze", discolor, or become unpresentable or unsatisfactory after the product is in use for a few months—or a few years? These questions come up frequently among users of finishing materials.

Recently a company that is new in its present line of business, wrote about a problem they faced. They are using a lacquer that is entirely satisfactory in performance; no complaints and no worries. But along comes a salesman who offers a lacquer that doesn't require thinning and it is priced at a dollar less per gallon. Should they switch brands and save some money. Or is there a possibility that the cheaper lacquer will fail to meet their performance requirements?

A reliable answer can seldom be obtained by asking for someone else's advice or opinion. But it can be obtained by making tests or hiring some dependable testing laboratory to make tests to find out whatever information is desired. Adhesion, print resistance, hardness, flexibility, gloss; color retention over a specified period of time; resistance to whatever is specified; freedom from such faults as checking, flaking, etc.—*all of these and more can be predetermined by established methods of testing.*

It's worth a great deal to a manufacturer to know the performance value of the finish he is using—that is, the qualities it has that are necessary for his particular product—and to be assured that its quality will remain constant or be improved. Without this knowledge there is always the possibility that the finish may not be exactly suitable for his products and the service to which those products will be subjected. Finish failures will give any manufacturer's products a bad reputation.

Articles describing several kinds of tests for finishing materails have been published in past issues of INDUSTRIAL FINISHING, and more will be published in the future. Also, various pieces of equipment for making certain tests are featured from time to time in the advertising pages and in the editorial section headed "Materials; Supplies; Equipment".

Reprints of several authoritative reports and talks on the subject of testing finishing materials can be obtained from the National Paint, Varnish & Lacquer Association, Inc., 1500 Rhode Island Ave., N.W., Washington 5, D.C. When buying finishing materials, price should be a secondary consideration; *performance value should always come first.*

Easy Safety Lessons For All Workers

Every three minutes an American worker is killed or seriously injured on his job. To meet the need for effective safety measures, Science Research Associates, 228 S. Wabash Ave., Chicago 4, Ill., has published, in a form suitable for industrial use,

BE FRESH . . . STAY FRESH!

on

Paint Spray Jobs

wear a DUPOR No. 4

The favorite paint spray respirator! Rubber face mask provides air-tight fit over nose and mouth. Twin filters keep aggravating fumes, gases, vapors out of lungs. Also wear as protection against sawdust, silica dust, grinding compounds.

COVER'S GAS-TIGHT FOG-PROOF GOGGLES $1.65

Sample sent $1.65 pp

H. S. COVER, South Bend, Ind.

Mac's FASHION BLEACH

Will Bleach All Kinds of Wood

MAC'S FAMOUS FASHION BLEACH is available for bleaching all kinds of wood including mahogany, the most difficult wood to bleach. It dries overnight to a desired bleached effect ready for sanding and for the regular finishing schedule. It can be applied by spray using a glass container.

Write for samples and descriptive folder.

The Lawrence-McFadden Co.

Headquarters for Fine Finishes Since 1875

7430 STATE ROAD *"Our 75th Year"* **PHILADELPHIA 36, PA.**

NOW! Tack Cloth in Handy Rolls *or* Cut Bulk

Cut off any size piece and use as needed.

Already cut and folded, ready to use.

Now you can get Tack Cloth packed the way it's easiest for you to use—either in 150 yard rolls of 36" wide cloth or in handy cartons—100 or more Tack Cloths to the carton.

No matter which way you buy it, you can be sure that every square inch will **stay** SOFT and TACKY until the very last bit is used up.

The Cut Bulk size is 18" x 36"—folded to 4½" x 18" for easy handling. **All of our Tack Cloth is Spontaneous Combustion-Proof, Lint-Free and Wax-Free.** It's clean and sanitary—there's no waste.

Write today for complete information, prices and samples.

Baughn Chemical Products Company

"The Tacky Wiper Specialists"

7027 N. RAVENSWOOD CHICAGO 26, ILL.

Also Individually Packed in Glassine Envelopes —144 to the Carton.

A WARRANTY OF SATISFACTION IN EVERY CARTON

the Revere Safety program which has reduced accident frequency at Revere Copper and Brass, Inc. more than 40%.

Introduced at Revere's Rome, N.Y., plant in 1945, by M. DeMilt Aird, supervisor of testing, the program consists of a test which measures the worker's knowledge of safety principles, and a 60-page-handbook of information on safety in general and in specific shop and plant situations. The program was developed by Aird and the psychology department of Syracuse university.

To bar language difficulties, the Revere Safety test consists entirely of pictures showing a cartoon character, Joe Brasco, who represents the typical worker, doing each operation three different ways. The worker taking the test indicates each picture which shows Joe breaking a safety rule. The handbook, named *For Your Own Good, For the Good of Us All,* may either be given workers to read, or used as the basis for group talks.

Good Fire Record Has Sales Appeal

If your finishing department has an excellent non-fire record (no recent fires) and has taken proper precautions to make reasonably sure that none will occur from avoidable causes in the future, then you have a point worth mentioning in your company's advertising.

One manufacturer has devoted an entire advertisement to telling customers that, "Incessant fire inspection helps to keep our plant in continuous operation in order that your plant, too, may not encounter the handicaps of down-time." It's a point worth stressing, even if you do not care to

emphasize it to quite the extent mentioned here.

We know one customer who suffered loss of prestige and goodwill because his supplier could not ship promptly. Reason for the delay? A "flash fire" in the finishing department. This man (and others who were similarly disappointed) would certainly be willing to listen the next time a manufacturer answers him that every possible safety measure has been taken *to keep materials moving promptly and safely through the finishing department.*

With markets still wide open for stock, distributors realize that each delay costs them real money. They will be interested to learn what you have done to sidestep fire hazards in the vital finishing processes.—G.M.D.

Science, Not Art, Rules Industry Today

★ Visit any large, successful industrial plant producing products that demand a high degree of color fidelity or color matching, and you'll generally find a spectrophotometer in use. Officials of these plants know that the human eye is extremely fallible in either judging color purity or in color matching, and have long since abandoned it in favor of the more precise scientific instrument.

The same applies to paint and lacquer mixing. The day of pouring so much of one component in a can then adding another component is gone. Today a precision amount of each component is added through flow

★ *Guest Editorial . . . Many readers can write an excellent editorial—two or three paragraphs that present a timely suggestion or valuable idea which will stimulate thought on a live subject. The Editor welcomes guest editorials and pays for those used.*

a Ufinco Product

"Your Seal of Dependability"

Manufacturers of

LACQUERS SYNTHETICS

Custom Built Finishes to your Specifications

UNITED FINISH COMPANY

established 1921

PEABODY, MASS.

Representatives throughout New England

RANDOLPH

LACQUERS, ENAMELS
DOPES, THINNERS
Clear Metal Finishes
Clear S. G. for Metal
Colored Lacquers
Texture Enamels
Aircraft Finishes

Specialized Production Finishes

PRODUCTS

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CARLSTADT, NEW JERSEY

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FILLERS
PAINTS
STAINS

For Highest Quality Finishes
Beauty and Durability

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RESTORE PAINT
IN 2 MINUTES

PER GALLON WITH
MIRACLE
BLUE - BOY
5 GALLON
PAINT REJUVENATOR
Paints, lacquers and enamel products can be restored to their original consistency without opening the can. Units available to handle from ¼ pint to 50 gallon drums. Immediate delivery.
Originators of paint rejuvenating equipment---sixteen years---thousands of satisfied users.
Write for folder & prices
MIRACLE PAINT REJUVENATOR CO.
127 E. 9th Street St. Paul 1, Minn.

meters, thus assuring consistent uniformity from batch to batch. There is no need to readjust pressures and spray nozzles every time a new batch reaches the paint booth, and the quality of the applied coating will remain consistent with that of the test coating used in originating the formula.

This precision is carried out even in storage where a rotating system of stock control makes certain that each component will leave the warehouse in turn, and that no one of them will have to remain on the shelves or in barrels longer than the other. It is not for John Doe painter to walk into the warehouse today and select his material at will from the stores present.

Industry was once defined as "a combination of the Arts and Sciences." That definition no longer holds. Today, with a very few exceptions, Industry is Science, and Science is an exacting master that brokes no interference from human fallibility. This seems brutal to many. Perhaps it is. But it is part of the cost of progress.

As one prominent industrial engineer puts it: "Industry does not want Art. Industry wants and must have exactness."—GILBERT C. CLOSE.

Look Around and Find the Answer

★ There is an old story of the salesman who became so engrossed in preparing his sales approach that he rode the train far past his prospect's station, missed his appointment, and thus lost the sale. There's an implied warning in this story for the finishing engineer who becomes so engrossed in his own department's work that he fails to see what is going on around him.

A good though relatively unimpor-

tant illustration of this occurred recently when a finisher-foreman spoke proudly of "his" idea to coat paint booth lamp shades with a transparent plastic film that could be peeled off and replaced when it became dirty, thus eliminating the bothersome practice of washing the shades with a solvent cleaner. The man was totally unaware that many finishing departments have been doing this for several years.

Another engineer spoke worriedly of his seeming inability to maintain a perfect color match between components of a product that were painted in batches and at different times. Yet a survey of his finishing department failed to reveal any measures for the close quality control necessary in this type of work, and which have been employed by other companies for many years.

Research in all of its phases is a function of the laboratory and should never be attempted on the production line. But problems common to most finishing departments do not require research for their solution. Most of them have been solved time and again by other companies, and the answers are available in magazines, books, from consulting engineers, or even from employees of other companies. It is much simpler, quicker and cheaper to consult these sources than to try and solve the problem from scratch. It is only necessary to look around and see how someone else has worked out the answer.

A noted consulting engineer said recently: "Eighty percent of the technical problems I'm asked to solve are already carefully analyzed in one of the books or magazines in my lirary.—GILBERT C. CLOSE.

I. C. D. FORMULA NINE

NON-INFLAMMABLE
« *wax free* REMOVER »

for paint, varnish, lacquer, baked enamel, adhesives

EASY TO APPLY—NO AFTER CLEANING

I. C. D. FORMULA 9 is the standard of safety and quality . . can be sprayed or brushed . . doesn't raise grain nor discolor . . quickly removes all kinds of finishes and coatings from any surface or material . . costs less to use . . saves time, labor and material.

BRUSH CLEANER I. C. D. — non-inflammable brush cleaner works fast . . does not injure nor loosen the bristles. Easy to use . . leaves the bristles clean as a whistle. Order a gallon can and convince yourself.

ORDER TRIAL GALLON AT DRUM PRICE

INDUSTRIAL CHEMICAL DEVELOPMENT CORP.

515 FLUSHING AVE. BROOKLYN 5, N. Y.

Tack-Off Dust, Grit and Lint with a "DUST-ALL" Tack Rag before finishing

Specks of dust, grit and lint accumulating on surfaces to be finished, cause blisters and blemishes when painted over. For only a few pennies per job, your finishing department provided with "Dust-All" Tack Rags to wipe off, collect and hold this objectionable matter, can be assured of fine finish jobs.

Ask for further information on "Dust-All" Tack Rags for industrial use and for a sample.

Be sure to get the Tack Rag that comes in the Red Checkered Bag.

HARDING Manufacturing Co.
10620 Gratiot Ave., Detroit 13, Mich.

Not Too Old to Be Progressive

One of the penalties of age—in many companies as well as in many individuals—is a dislike for change. Over an extended period of time the entire organization may gradually settle into a definite routine of procedure which becomes difficult if not impossible to change. Many a good idea is shelved with the talked-myself-into reason that "it is not for us", or "we are too small", or "we are too large", as the case may be, "to make a thing like that practical".

Frequently everyone in the organization is so close to it and so accustomed to its long established methods and procedures that no one can take a detached viewpoint and make a fair appraisal of the real possibilities of any suggested change that might be a definite improvement. This is one reason why new companies are formed, and why improved products and services are brought out, why new kinds of competition appear.

On the other hand, no business can afford to be always changing its products, methods, materials and personnel. This would produce instability, confusion and uncertainty — and it would prove to be expensive. But there is a happy medium, a middle of the road policy where suggestions or proposals for contemplated changes are given proper attention, thought and consideration, and discussed at length. As a result of this open-minded policy any concern can keep itself in line with what is sound and logically progressive in all phases of its operations, with the result that its usefulness will be increased and profitably extended over a much longer period of time.

Random Comment on the Industrial Scene

(Continued from page 12)

important role in protective and decorative finishes for refrigerators, stoves, automobiles and similar products, they serve in printing inks, plastic handbags, shoes, upholstery, luggage, molded products, caulking compounds, bonding agents, and in such processes as the treatment of textiles and papers. In combination with other chemicals, they produce special fire retarding, anti-ice and non-fogging paints, and even anti-sweat coatings that eliminate moisture condensation on water pipes.

Sonneborn Forms Paint Division

Formation of a separate Paint Division to promote the sale of paints and varnishes has been announced by L. Sonneborn Sons, Inc., 300 Fourth Ave., New York 10, N. Y., refiners of petroleum products and manufacturers of chemicals and coatings. Sales activities of the new division will be independent of those of the Sonneborn Building Products Division, which will continue to sell paints and varnishes as well as other Sonneborn building product specialties such as concrete and mortar admixtures, waterproofing, dampproofing and caulking compounds, roof coatings and floor waxes.

The new Paint Division is located at the Sonneborn factory in Nutley, N. J., and is headed by Milton D. Lieber, who has been active for many years in industrial and trade sales paint merchandising and in the improvement of paint store sales techniques.

U. S. Testing in N. Y.

United States Testing Co., Inc., announces the moving of its New York City offices to the McGraw-Hill Building, at 330 W. 42nd St. The new office will be managed by Mr. Thomas C. Ridgway of the Company's Service Division.

The United States Testing Company, one of the largest and oldest independent commercial testing and research organizations, has its main laboratories and offices at Hoboken, N.J., and eight other branches throughout the country.

"Wood Graining"

ADDS

Eye Appeal

American Graining Plates are photographic reproductions of fine woods.

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Graining Plate Division

104 E. Mason St., Milwaukee 2, Wis.

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(Lamped or Lampless)
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Manufactured by
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PEARL ESSENCE
"Astralucine Brand"
Produces a high luster
on a variety of finishes
Write for your free copy of our informative Technical Bulletin
"Pearl Essence Finishes"
—what they are and how to use them.
Argenta Products Co.
EASTPORT, MAINE

PINHOLING PROBLEMS?
Use Liquafill Sizing.
For Information, Write
THE LIQUAFILL MFG. CO.
823 Richard St. Dayton 3, Ohio

"Easy on the Eyes" Safety Film

A new safety training film which should convince the most skeptical workman that it's smart to wear safety glasses has just been announced by the National Safety Council.

Titled "Easy on the Eyes," the film opens on an emotional appeal for workers to realize what their eyes mean to them, then shows how easily eyesight may be lost and that such loss is personal. The film shows what glasses are best for specific jobs, presents case histories of injured workers and the dramatic testimony of blind persons.

"Easy on the Eyes" is available from the National Safety Council in the usual 35-mm sound slidefilm; it is also offered in a new form for 16-mm sound-motion projectors.

Prices for outright purchase, preview or rental may be obtained on request to National Safety Council, 20 N. Wacker Drive, Chicago 6, Illinois.

Finishing Exposed Wood for Uph'd. Furniture

Made of plain woods these parts are generally finished to look like expensive hardwoods.

EXPOSED WOOD portions of fine upholstered furniture deserve an attractive and durable cabinet finish. The first consideration is that the color and treatment of the wood must be in harmony with the design and color of the covering material. For example, a French period design may call for a light French walnut color. Highly carved wood will show up more effectively if it is highlighted or antiqued to emphasize the carving.

A Colonial maple design calls for the characteristic reddish-brown maple color, perhaps with a bit of subdued highlighting. Modern designs and covers may require very light clear colors. Early English designs usually have the characteristic 18th Century mahogany color.

Exposed portions of the frames of upholstered furniture are usually made from plain cabinet woods such as gum, birch, maple or beech. The finishing problem is to obtain satisfactory imitations of walnut, mahogany and maple finishes on these woods. Some sort of pigmented stain or glaze is often used for a satisfactory imita-

tion. Non-grain-raising stains are used on light woods and toned down with lacquer shading stains. Non-grain-raising stains and fillers are used on mahogany and walnut.

Probably the simplest finishing method is to apply pigment wiping stain of the right color directly to the raw wood and then blend out the color by wiping with rags. Staining and drying are followed by a coat of lacquer sealer and two coats of lacquer.

Some finishers prefer to washcoat the wood before applying the pigment stain; they may put some dye-base stain in the washcoat to deepen the color and aid in obtaining a uniform color. The washcoat holds the pigment wiping stain out to some extent, so that it works more like a glaze.

If the wood requires filling, as in walnut or mahogany, a regular cabinet finishing schedule can be used. Combination filler-stains are finding wide application in this type of work. The combination is applied directly to the wood and then wiped like an ordinary filler. Usually this treatment supplies all the color needed, so that a coat of sealer and one or two topcoats finish the job.

For a better type of work, glazing is recommended because it lends itself to highlighting and antiquing, especially if the wood is carved. A typical mahogany finish on gum wood might consist of the following: A colored washcoat, pigment wiping stain, glazing sealer, glaze, sealer, and one or two coats of lacquer. Final operation is rubbing or steelwooling and waxing.

Considerable skill is required to do an attractive job of glazing. The finisher must know just how much to put on, how much to wipe off and blend out, and where; and he must have in mind a clear picture of just what he is aiming to achieve.—R. H. WAMPLER.

General Coatings "Organized"

The General Coatings Corp. will manufacture industrial finishes in its newly constructed plant at 2001-25 Mendell St., Chicago 14, Ill.

A complete line of product coatings will be available to the trade, with particular emphasis on materials formulated to the individual requirements of customers.

Heading the new company is W. Scott Ryan, and associated with him is Harry D. Bledsoe. Both men have long been associated with the industrial finishing industry.

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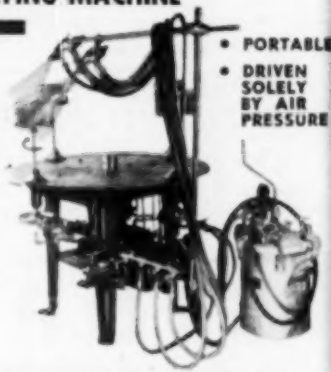
automatic-pneumatic.
SPRAYING MACHINE



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Production up to 1000 pieces per hour

Uses regular exhaust booth

Only one operator is needed to load unfinished and remove finished work.
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FOR ALL FINE FINISHES
TAC-ALL TACK RAGS
Packed bulk or individually.
Prices and samples on request.
GEO. W. RENNER CO.
2309 Lillie St., Ft. Wayne 5, Ind.

Beck Heads Bink's Ceramic Div.

Binks Mfg. Co., 3122 Carroll Ave., Chicago 12, Ill., makers of industrial finishing equipment, announces the appointment of Roy D. Beck as Manager of its Ceramic Division. Mr. Beck's first task in the new position will be the further expansion of the Binks Ceramic Division, making possible greater assistance to ceramic and porcelain enamel finishers.

Mr. Beck will work intimately with Binks' customers and prospects, helping them to obtain finer finishing in both the procelain enamel and the ceramic fields. A registered professional engineer, Mr. Beck is a graduate of Ohio State University where he obtained degrees in ceramic engineering. He was recently in charge of all finishing in the domestic appliance division of the Pressed Steel Car Co., Chicago, Ill.

David Busker Joins B.F.C.

David Busker, previously associated with two other manufacturers of finishes and with the National Bureau of Standards, has joined Better Finishes & Coatings, Inc., Newark, N.J., manufacturer of industrial finishes and "Liquid Envelope" peelable plastic coatings. Mr. Busker is well known for his contributions on coatings to the "Plastic Encyclopedia" and to leading technical publications in the chemical and coatings field. In his new connection he will be in charge of the development of special-purpose industrial finishes and maintenance paints.

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A service to aid industry in producing longer-lasting and better-looking products. Quick predetermination of durability and permanency by actual exposure test in South Florida. Write us today for full information.

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rejects and refinishing with

IDEAL TACK RAGS

A low cost, high quality tack rag that will insure a clean surface every time. Stop loss from rejects by having a supply of fresh, clean Ideal Tack Rags always on hand. Their extra tackiness will quickly wipe every trace of dirt and dust from the surface prior to applying the finish.

For a Perfect Finish

Always use Ideal Tack Rags in 4 efficient sizes to suit the job. You will be amazed at the difference in time and money saved and results achieved. They cost no more than ordinary tack rags. Spontaneous combustion proof.

Write for free sample or trial order today.

IDEAL CHEMICAL COMPANY
1689 Lee Road Cleveland 18, Ohio

Classified Advertising

Rate: $1.00 per line per insertion—minimum $5.00

FINISHING FOREMAN WANTED

For furniture factory in Pennsylvania making fine line of veneered bedroom pieces on mass production basis. Must have full knowledge of production problems, costs and be able to handle help. Give experience, references and salary. Address IF-732, care Industrial Finishing.

CABINET ROOM FOREMAN WANTED.

Furniture factory in Pennsylvania is looking for a foreman for cabinet room on veneered bedroom furniture. Give references, experience and salary. Address IF-733, care Industrial Finishing.

INDUSTRIAL SALESMAN WANTED

For Indiana or Chicago. One of the oldest manufacturers of finishing materials in the middle west has excellent openings for salesmen to sell synthetic enamel, lacquer, lacquer enamel, varnishes to industrial trade. Openings in Indiana and Chicago. Liberal commission agreement. Excellent prospects for man with experience. Address IF-739, care Industrial Finishing.

CHEMIST—EXECUTIVE WANTED.

Small, successful industrial wood and metal coating manufacturer has executive position open for graduate chemist 30-45 years old with laboratory and sales experience. Salary $7,200.00 per year plus bonus. In replying, give complete education and business background. Replies handled with utmost confidence. Address direct to ROBERTSON CO., INC., 1315 W. Kentucky St., Louisville 10, Ky.

SALESMAN WANTED.

Experienced Paint Spray Equipment salesman. Good salary plus commission. Address IF-712, care Industrial Finishing.

PAINT FORMULATOR WANTED.

San Francisco plant needs capable formulator of industrial coatings. Good salary and share in profits for right man. Our people know of this ad. Address IF-736, care Industrial Finishing.

PAINT SALESMAN WANTED.

Excellent opportunity for industrial coating salesman. Plant located in San Francisco bay area. Applicant must be experienced and have good following. Good salary and commission. Have well manned and equipped laboratory and factory. Address IF-735, care Industrial Finishing.

SALES REPRESENTATIVES WANTED.

One familiar with Product Fnishing Equipment for exclusive Ohio or Indiana territory. Straight commission basis on all types conveyors, bake ovens, washers and complete finishing systems. THE SPRA-CON CO., 1402 N. Western Ave., Chicago 22, Illinois.

INDUSTRIAL FINISHES SALESMAN WANTED.

Desirable situation available for experienced finishing materials salesman with a following in Cleveland and surrounding area. New Midwestern plant built by established firm insures prompt service. Manufactures complete line of coatings. Full details in reply, please. All kept strictly confidential. Address IF-738, care Industrial Finishing.

PAINT SALESMAN WANTED.

Ohio manufacturer has openings for experienced industrial paint salesman familiar with Southern Ohio and Southern Indiana territories. Please give complete details in first letter covering age, past experience, references, salary expectancy, etc. Address IF-723, care Industrial Finishing.

SALES REPRESENTATIVE WANTED.

Protective Coating Sales Representative for West Coast. Reputable Michigan Manufacturer wishes to build up West Coast Sales in a nationally recognized, tried and proven line of protective coatings. Excellent opportunity for right man to become intimately identified with the New Western Division. Protective Coatings experience necessary. Technical education helpful. Reply in full giving age, education, details of experience and salary requirements. Address IF-734, care Industrial Finishing.

SALESMAN WANTED.

Salesman for lacquers and enamels by national manufacturer for Philadelphia territory. Address IF-737, care Industrial Finishing.

WANTED TO BUY.

Will Buy your dirty Thinners and Solvents. Send sample or letter giving approximate contents and solids. Address THE JOHANN CO., 633 E. 138th St., Dolton, Ill.

PRIMER FOR SALE.

Red Oxide—Sherwin-Williams and Du Pont—Bake or Air Dry—Best Quality—$1.10 per gal. drums, $1.25 in 5's. Check with order please. HOGAN PAINT & CHEMICAL CORP., Edgemere, L.I., N.Y.

FINISHES TO ORDER!

Small Indiana Paint Manufacturer, both architectural and industrial, will manufacture products on either your or our formula on cost plus basis. This means extra commissions for a salesman with a following or a savings to anyone buying finishes in quantity. Our employees know of this advertisement. Address IF-730, care Industrial Finishing.

FOR SALE.

One Paasche Conveyorized Paint Spray Booth, 20-in. belt, 9-ft.9-in. drying section (infra-red). Ideal for small jobs. W. H. HUTCHINSON & SON, INC., 1031 North Cicero Avenue, Chicago 51, Illinois.

PATCHING KITS—12 x 15 inches.

Leather - covered, containing brushes, patching knives, lacquer stick, varnishes, solvents and stain powders, total 21 bottles. $25.00 plus express. FLEXON MFG. CO., 4827 N. Bell, Chicago, Ill.

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GARDNER LABORATORY

Bethesda 14, Md.

INDEX to Advertisers

Advance Paint Co. ..... Third Cover
Allied Finishing Specialties Co. 10
American Air Filter Co., Inc. 97
American Richwood Products Co. 131
Amplex Corp. 75
Argenta Products Co. 132
Atlas Powder Co. 59

Barker Chemical Co. 55
Barrett Co., Leon J. 121
Baughn Chemical Products Co. 126
Behr-Manning Corp. 29
Binks Mfg. Co. 62-63
Black Mfg. Co., The 105
Brown Co., Andrew 115
Buffalo Forge Co. 99

Capitol Machine Co. 31
Chemco Products, Inc. 13
Claremont Waste Mfg. Co. 95
Classified Advertising 134
Clinton Co., The 73
Commercial Solvents Corp. 107
Cover, H. S. 125

Day & Co., James B. 89
DeBurgh Conveyors 86
De Vilbiss Co., The 6-7
Dolan & Co., The V. J. 9
Du Pont de Nemours & Co., E. I. 68-69
Duralac Chemical Corp. 123

Egyptian Lacquer Mfg. Co., The 103

Ferro Enamel Corp. 43
Fostoria Pressed Steel Co. 53

Gardner Laboratory 135
Gates Engineering Co. 121
Grand Rapids Varnish Co. 4
Gray Co., The 2-3

Hammond Solvents Recovery Service 120
Harding Mfg. Co. 130
Hercules Powder Co. 11
Holland & Sons, J. 133

Ideal Chemical Co. 134
Industrial Chemical Development Corp. 129
Industrial Chemical Products Co. 41
Interchemical Corp. ..... Second Cover

Kirk & Blum Mfg. Co. ..... Back Cover
Kirker Chemical Co. 65
Koch & Sons, Inc., Geo. 1

Lanly Co., The 10
Lawrence-McFadden Co. 125
Lilly Varnish Co. ..... Front Cover
Liquafill Mfg. Co., The 132
Lowe Brothers Co., The 46-47

Maas & Waldstein Co. 25
Mahon Co., The R. C. 14-15
Mearl Corp., The 109
Miracle Paint Rejuvenator Co. 128
Miskella Infra-Red Co. 132
Monsanto Chemical Co. 61

National Air Sander, Inc. 111
National Lacquer & Paint Co. 131
National Paint, Varnish & Lacquer Assoc. Inc. 76-77
Naz-Dar Co. 119
New York Woodfinishers Supply Co. 83

Oakite Products, Inc. 39
O'Neil Duro Co. 93

Perfection Paint & Color Co. 101
Peters-Dalton, Inc. 57
Pittsburgh Plate Glass Co. 18-19

Qualatone Products, Inc. 117

Randolph Products Co. 127
Ransburg Electro-Coating Corp. 51
Reliance Varnish Co. 78
Renner Co., George 133
Rinshed-Mason Co. 16
Rockford Varnish Co. 87
Ross Engineering Corp., J. O. 20

Schaefer Varnish Co. 81
Schmeig Industries, Inc. 17
Shell Chemical Corp. 113
Sherwin-Williams Co. 34-35
Snyder Brothers Co. 120
Solvents Recovery Service, Inc. 120
South Florida Test Service 134
Spruance Co., The Gilbert 67
Standard Varnish Works 21
Stille-Young Corp., The 128
Sundstrand Machine Tool Co. 91

United Finish Co. 127
United Lacquer Mfg. Corp. 27

Varnish Products Co. 13
Vol-U-Meter Co. 117-135

Wilson-Imperial Co. 12
Wolverine Finishes, Inc. 85

Young & Bertke Co. 45

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Since 1899, Advance has helped manufacturers solve their toughest finishing problems—with surprising speed and amazing results.

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Indianapolis Indiana

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- 2 DUST CONTROL SYSTEMS
- DEGREASING AND ACID ETCHING VENTILATION
- PAINT SPRAY BOOTHS (INSTALLED ONLY)
- PAINT DRYING OVEN AND CONVEYOR
- MAKE-UP AIR SUPPLY SYSTEM

A variety of problems in the Finishing Departments of NuTone Incorporated, were solved by KIRK & BLUM Engineers. Shown here are the various installations which were designed, fabricated and installed by KIRK & BLUM.

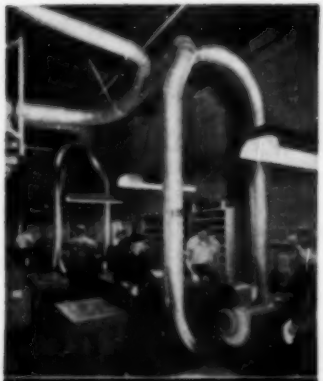
Of special importance is the "Make-up" Air Supply System which filters, heats and replaces air exhausted by the other systems, eliminating undesirable winter drafts.

The wide experience of the KIRK & BLUM organization is at your service. "Clean Air . . . the Invisible Tool" can do much to increase the efficiency of your operations. For more details and literature, write The Kirk & Blum Mfg. Co., 2831 Spring Grove Ave., Cincinnati 25, Ohio.

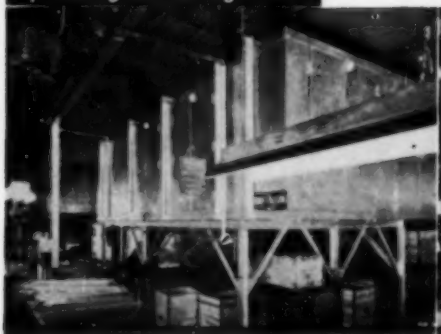
FOR CLEAN AIR . . . THE INVISIBLE TOOL

KIRK AND BLUM

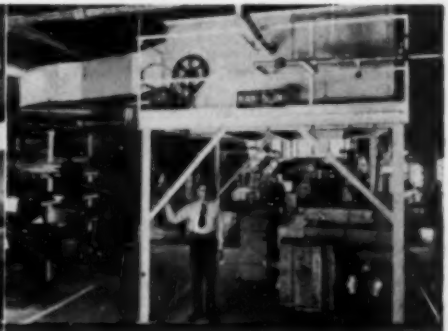
DUST AND FUME CONTROL SYSTEMS
INDUSTRIAL OVENS



Two KIRK & BLUM Dust Control Systems serve the polishing and buffing room.



Overhead conveyorized Paint Drying Oven installed complete by KIRK & BLUM.



"Make-up" air supply system replaces air exhausted from plant.